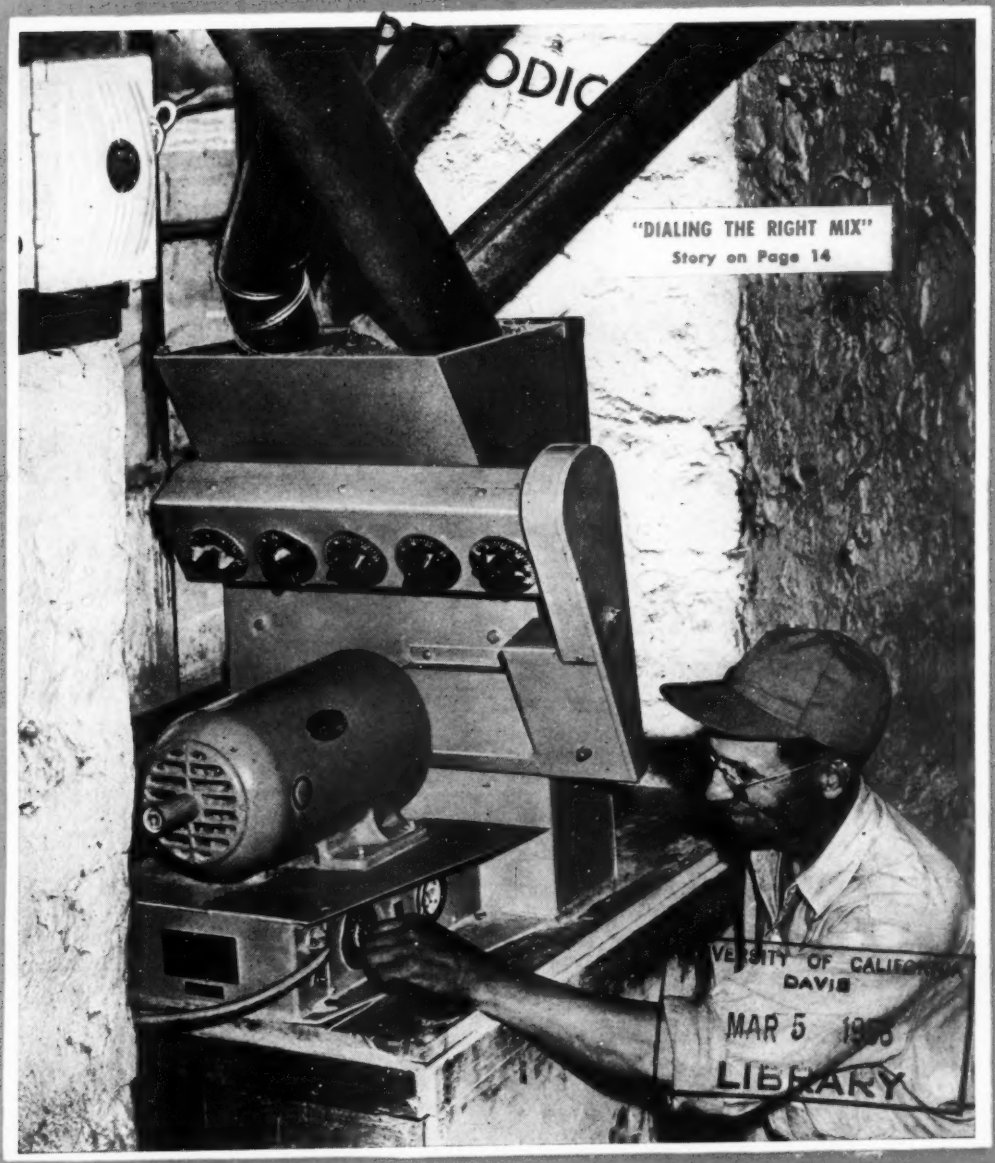
TK4018
ES
V.27
No. 9

# ELECTRICITY ON THE FARM *Magazine*

NOVEMBER, 1954

Comfort from Kilowatts . . . .
Drier Fan Ventilates Barn . . .
An Adjustable Cattle Feeder .
Let's Shop for a Food Mixer .
Minnows by the Million . . .

27th Year




VERSITY OF CALIFORNIA
DAVIS
MAR 5 19
LIBRARY

A CASE-SHEPPERD-MANN PUBLICATION

Ask for G-E Motors and Control on all Electrified Farm Equipment you buy!

# GENERAL ELECTRIC FarmNews

Ask for G-E Motors and Control on all Electrified Farm Equipment you buy!

MORE POWER TO THE AMERICAN FARMER through more electricity on the farm

# How three farmers put low-cost electricity to work to help raise profits and reduce work load

## NEW COOLER ENDS SOUR MILK PROBLEM

"I don't have any more worries about sour rejects since I got this new milk cooler," says Mr. L. D. Pitcher of Montrose, Ill. This low-cost cooler, with its big 7-can capacity, is very economical to operate. In addition to a rugged G-E motor, it features a removable refrigeration unit for easy servicing and an ice reservoir to keep cans cold in case of emergency.

## ADEQUATE WATER SYSTEM UPS PROFITS

"My new system supplies plenty of water—as a result, hogs gain weight faster and egg production is raised. This means more profit when I sell," says Mr. Gilbert Schroeder of Remson, Iowa. Powered by a reliable G-E motor, Mr. Schroeder's pump provides ample water for all his domestic and farming needs 24 hours a day.

You know how much the cost of running a farm has gone up in the past fifteen years. But while feed prices and labor costs have almost tripled since 1939, electricity has gone up *only 6%!* Little wonder that progressive farmers everywhere are putting more and more low-cost electric power to work.

When you buy electrical equipment for your farm, be certain it has General Electric components—they're your assurance of the best in dependability and performance.

## NEW FAN UNIT RAISES MILK YIELD 15%

"Our milk yield increased at least two cans a day since we installed these fans," says Mr. A. L. Bidne of Lake Mills, Iowa. "And now that I can maintain proper winter air circulation, the barn's a lot healthier place to work." This new fan unit, with dependable G-E motor, control and thermostat, keeps barn fresh and dry at a constant 50° F.

## FREE Mail this coupon!

**GENERAL ELECTRIC COMPANY**
**Section 330-4B, Schenectady 5, N. Y.**

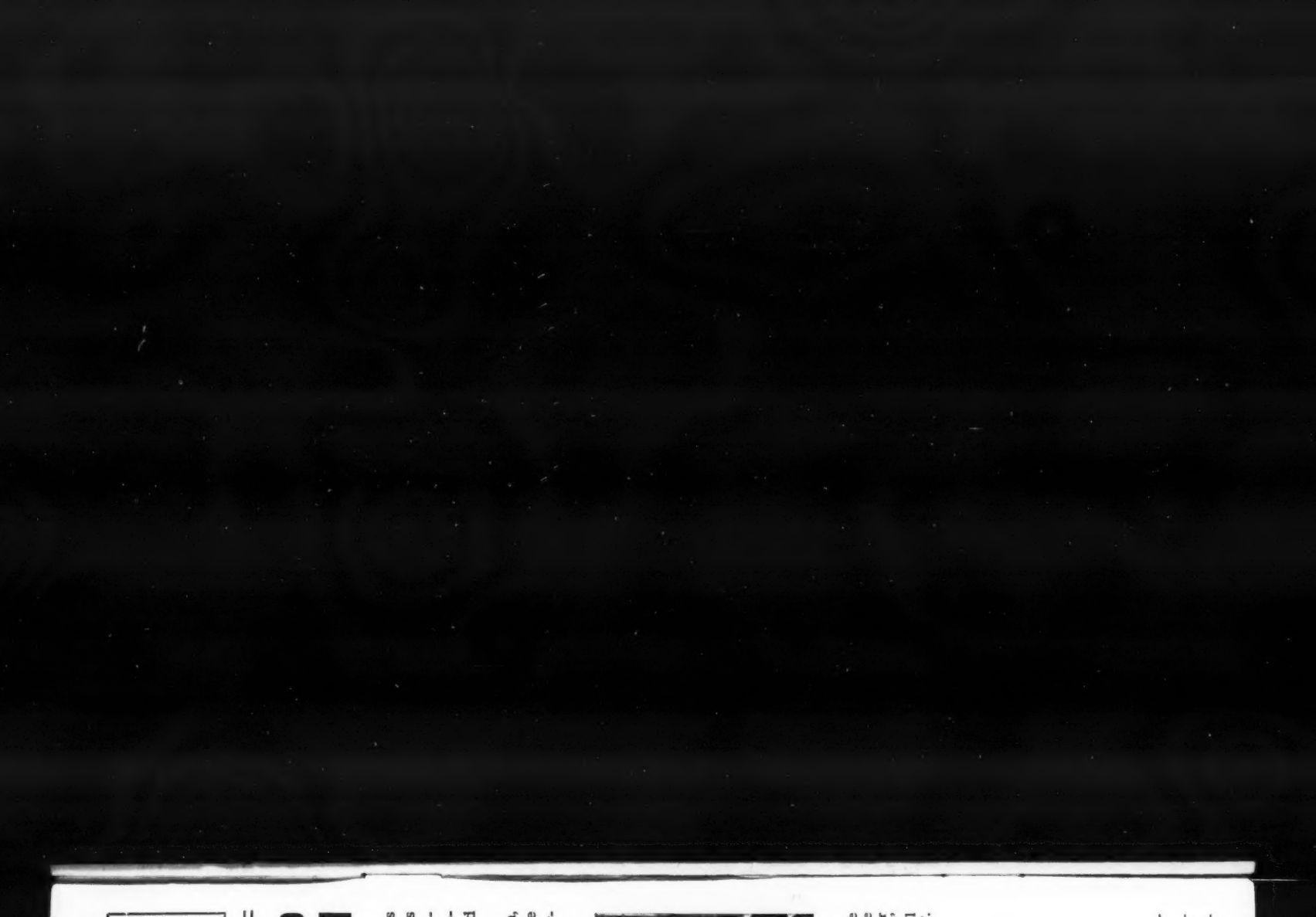
I would like additional information on the following:

- ☐ Ventilator
- ☐ Water Systems
- ☐ Milk Cooler
- ☐ How to Choose Your Motor

NAME_____

ADDRESS_____

CITY_____ STATE_____



# Editor's Chat

## MECHANIZATION AND THE BETTER LIFE

A very impressive report on recent developments in agriculture was released recently by the Farm Equipment Institute. It was prepared by Drs. Earl L. Butz and Howard Diesslin of Purdue University. Dr. Butz is now on leave of absence from Purdue and is serving as Assistant Secretary of Agriculture.

Particularly interesting to me were their observations regarding the impact that mechanization has made on our farms. Thinking that you would also be very much interested, here are a few excerpts from their report.

"Agriculture is now big business. It is inevitable that family farms are becoming larger, as the number of workers on farms decreases and as mechanization of our farms continues at a rapid pace. It is estimated that the value of the United States agricultural plant is $157 billion. This means a national average of approximately $30,000 per farm. Obviously, these averages include many small farms. The figure for typical commercial family farms is larger.

"On a group of 321 farms in central Indiana, keeping farm records in cooperation with Purdue University, average capital invested in 1952 was $86,500 per farm. This included real estate, livestock, equipment, and supplies. These were typical corn belt family farms, averaging 255 acres in size. The farms had an average of 1.75 men working per farm per year (including the operator). This means an average investment of $49,500 per farm worker.

"The end result of mechanization of agriculture has been a rapid increase in the productivity of agricultural labor and a rising standard of living for the American farmer. The increase in agricultural productivity in large part is a direct result of the mechanization made possible by American industry. In 1953, farm output averaged 44 percent above 1935-39, but the agricultural labor force had decreased nearly 30 percent and output per man hour was up 78 percent over pre-war. The increased productivity resulted from the use of nearly 90 percent more power and machinery on farms. Therefore, taking into account the decrease in the agricultural labor force, the typical agricultural worker today has at his disposal more than twice as much farm power and machinery to enable him to produce 78 percent more per man hour than in 1935-39. The average U. S. farm today has more than $2,000 invested in farm power and machinery per worker as compared with less than $300 per worker in 1940."

In a very few words, well put, Drs. Butz and Diesslin have reported your acceptance of mechanical power and what you have accomplished with it.

## THE CENSUS IS VITAL

You have probably already received in the mail a census blank with a lot of unanswered questions. Following on the heels of the questionnaire will be an enumerator to collect it. While he's at your place, he will probably check your answers to see if everything is in order. All of us get a little fed up at times with all the blanks we are asked to fill in. And so often we wonder why we should bother. As for those census sheets, next to our voting ballot, they are most important. Here's why our agricultural census taken every five years is so necessary.

The census is the foundation for the entire statistical system covering the nation's agriculture. It provides detailed information, available from no other source.

Manufacturers and marketers use the assembled statistics to measure sources of raw materials and conversely, to determine the needs of the farm market for machinery, supplies, and services necessary to efficient operations. The census figures serve as reference points for all kinds of estimates, notably those of USDA. For efficient planning you too can benefit greatly from the census tabulations.

The next census will be taken in 1960. Until then "answers" to agricultural questions will be based on the vital answers you provide now.

Jim Ridout

**ELECTRICITY ON THE FARM** *Magazine*

NOVEMBER, 1954—VOL. 27, NO. 9

Acceptance under section 34.64 P.L.&R. authorized at Dayton, Ohio.

W. J. RIDOUT, JR., *Editor*
K. V. ANDERSON, *Managing Editor*
EDNA E. KESTEL, *Homemaking Editor*
KARL H. GORHAM, *Business Manager*

**Subscription rates:** $1.00 per year; $2.00 for 3 years; $3.00 for 5 years. 10¢ per copy. Bulk rates on request.

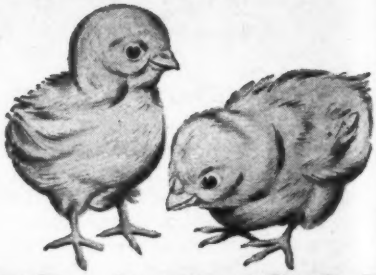
Published monthly except combination issues June-July and Aug.-Sept. by **CASE-SHEPPERD-MANN PUBLISHING CORP. Executive Offices: 24 W. 40th St., New York 18, N.Y.** KARL M. MANN, *President;* FRED SHEPPERD, *Editorial Director;* I. H. CASE, *Vice-President and General Manager.* Mid West Office: 8 So. Dearborn St., Chicago 3, Ill. *Western Representative:* 6000 Miramonte Blvd., Los Angeles, Cal.

*Copyrighted 1954 by Case-Shepperd-Mann Publishing Corp. Not to be reprinted without permission.*

# Grow healthier chicks...

## and healthier profits...

with



# SYLVANIA INFRARED LAMPS!

Get this **FREE** Helpful Booklet!

This booklet shows why profits and chicks both grow fast when you brood with Sylvania Infrared Lamps. These lamps give you the cleanest, quickest heat obtainable. Healthy heat, too . . . no smoke, no ashes, no fumes.

*Furthermore,* Sylvania's Infrared Lamps keep down initial costs. There's no high-priced equipment. You can readily construct an efficient 500-chick brooder yourself using three or four 250-watt Sylvania Infrared Lamps.

New illustrated booklet, "Better Lighting for Your Farm," gives you 12 pages of money-saving hints about the efficient use of Sylvania Lamps around your farm.

***Don't miss this booklet! Mail coupon for your copy NOW***

# SYLVANIA

**Sylvania Electric Products Inc., 1740 Broadway, New York 19, N. Y.**

In Canada: Sylvania Electric (Canada) Ltd.
University Tower Bldg., St. Catherine Street, Montreal, P. Q.

**LIGHTING • RADIO • ELECTRONICS • TELEVISION**

**Sylvania Electric Products Inc.**
**Dept. 4L-2911, 1740 Broadway**
**New York 19, N. Y.**

Please send me FREE, Sylvania's new illustrated brochure, I-673: "Better Lighting for Your Farm."

NAME_____

STREET_____

CITY_____ RFD____ STATE_____

# Drier Fan Ventilates Barn

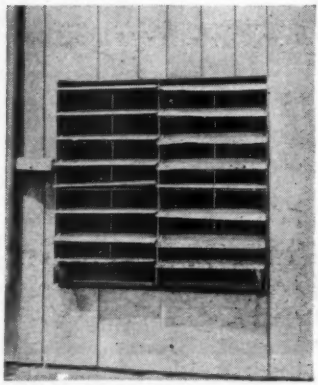
## Gives Off-Season Use While Its Motor Drives Feed Mixer

By W. H. SMITH

Each year more farmers are using forced-air hay drying equipment. Almost without exception, these farmers are pleased with the high quality hay they have cured and the resultant increased production from their herds. Their drying equipment, basically a motor and fan, has frequently served the second purpose of drying corn as well as hay. And some are using the motor, alone, to operate other pieces of machinery. That just leaves the fan idle during the winter. Even this can be changed to give year-round use of equipment.

In general, farmers who own hay driers have 10 to 20 or more head of dairy or beef cattle. This many cattle in a barn create a need for barn ventilation. Controlled ventilation is a job for an electric fan, and any farmer who owns a hay drier has in his possession a potential barn ventailating system.

In brief, the conversion of a hay drier to a barn ventilator is accomplished by turning the fan around to exhaust air from the barn. The speed of the fan is reduced to deliver the proper amount of air for the size of the herd. In many instances this job can be done quite simply with very little labor or cash.



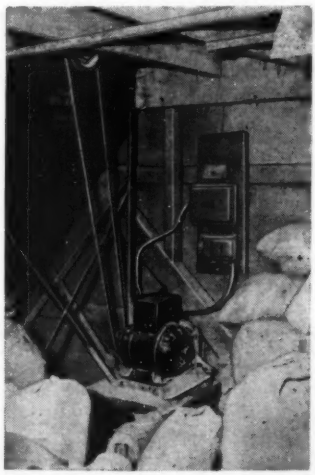
Although the fan is larger than a regular barn ventilating unit, the slower speed reduces the amount of air handled to the needs of the stable. Shutters, propped open while picture was taken, close when fan is not operating.

Harold Bittner, registered Jersey breeder near Danville, Ohio, is now ventilating his dairy barn with the 36″ propeller type fan he used to dry hay the last two years. To convert this unit the following steps were taken:

1. The main air distribution duct in the hay mow was sealed by a door 6 feet from the fan. Then a 2′ x 4′ opening into the dairy stable, below, was made in the floor of the duct.

2. The fan was turned in place so that it would blow out instead of in.

3. The 5 hp motor was disconnected and replaced by a ½ hp motor, bolted directly to the fan frame. (The larger motor is now being used on a 1 ton feed mixer.)

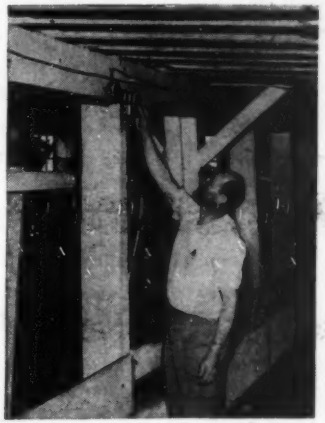


The 5 hp motor, from the hay drying fan, drives a feed mixer during the winter months.

4. Pulleys were installed to turn the fan at 500 rpm. At this speed, it delivers about 7200 cubic feet of air per minute. This is about right for a 36 cow herd there in Central Ohio.

5. A set of louvers was installed over the fan outlet to prevent back drafts when fan was not operating.

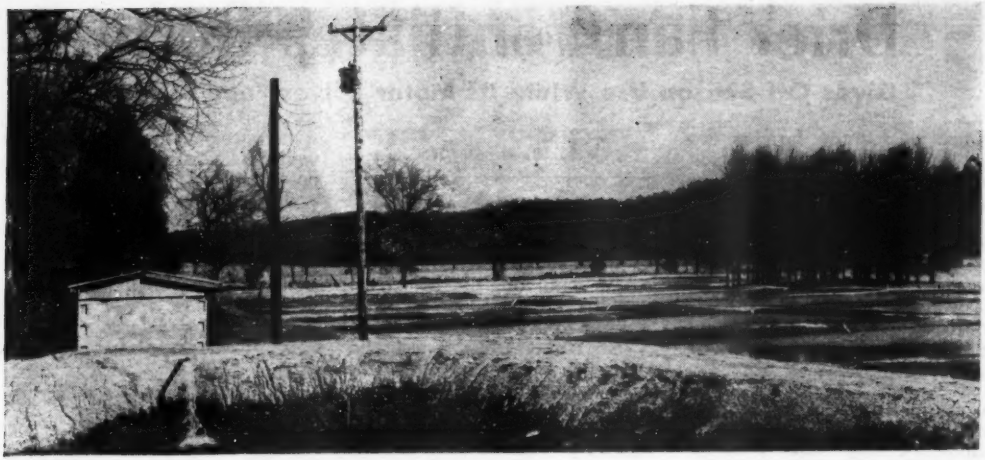
6. A thermostat was mounted in the barn and wired to turn the fan on or off as barn temperature varied. Thus, the temperature was maintained between 45 and 50 degrees.



An adjustable thermostat placed over the manger, is set so that the fan operates to maintain an even barn temperature.

These six easy steps converted this hay drier to a barn ventilator. Approximately $90 covered the cost. The fan is doing a wonderful job of exhausting moisture and stale air from the barn and eliminating sudden temperature changes. Mr. Bittner reports his barn is now a much more pleasant place for himself, as well as the cattle. What's more, the fan, which paid for itself, curing hay, is now paying a bonus. Mr. Bittner says it will only take about an hour to change the fan back when haymaking time arrives again.

Some fan manufacturers are now selling a package unit consisting of the small motor, belt, pulleys, thermostat, and outlet louver, which makes such a conversion quite simple. We believe there are probably many other dairy farms where a ventilation system can be installed this easy way.



Here you can see the pump house with water entering the first of the nineteen interconnected ponds. From the last pond, it flows on into a nearby river.

# Minnows by the Million

## They're the Cash Crop on this Fish Farm

By VAN G. SUTLIFF

Midwestern fishermen are rapidly getting acquainted with George Haberberger and what we might very well call his "fish farm." Minnow production will soon reach the one million mark on this Missouri farm, located on Highway 66 just 40 miles west of St. Louis. George's place has become a popular spot for fishermen headed toward the beautiful Ozark streams to stop and fill their minnow buckets and get hot tips from returning fishermen on where the big ones are striking best.

The fish farm consists of 19 rectangular ponds measuring about 100'x150' and with a 5 foot depth. They are connected so that water runs from one pond to the next and finally empties into the Bourbeuse River. A 3 hp motor driven jet pump, installed on a 118 foot well supplies water for the entire operation. The pump runs almost continuously, delivering about 75 gallons per minute to meet the minnows' demand for fresh water.

Saleable minnows are transferred to concrete tanks like this one from which George Haberberger dips minnows to order. Note the pipe over the tank from which fresh water constantly enters the tank.

Raising husky, vigorous minnows is a technical job, requiring lots of know-how. Not only must plenty of water be supplied, but the minnows must be fed a special formula consisting mostly of by-products of grain mills. George claims it takes a lot of feed to keep his minnows growing. As to the best variety of minnows, George likes "Tuffies," "Black

This three hp pump provides all the water needed for the nineteen minnow hatching ponds.

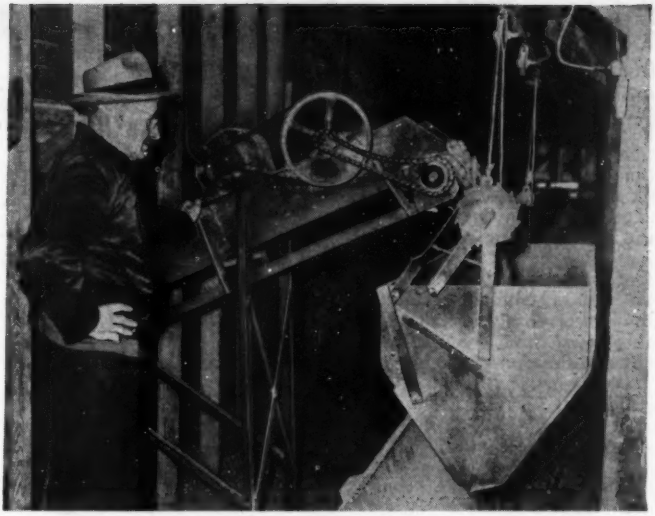
Dace," or "Black Heads." He has recently secured some gold fish brood stock and anticipates a good market for these.

Keeping the moss out of the ponds could be a problem, but George uses copper sulfate to destroy this menace. About 5 lbs. of copper sulfate crystals are dissolved in a settling basin. This weak solution gradually feeds into the ponds, killing the moss but leaving the minnows unharmed.

Minnows are sold on both a wholesale and a retail market. The first step in marketing is to run the minnows over a bar type grader which sorts them into the desired grades and lets the little ones return to the pond. A specially equipped truck carries the minnows to the retail outlet located on the highway. Here the different grades are placed in separate concrete tanks 10′ long and 30″ deep. Continuous streams of water, from ¾ inch holes bored in overhead pipes, keep the water fresh. A dip net is used to recover minnows from the tanks as they are counted and sold. Minnows are brought to the tanks every two or three days so a fresh supply is always on hand.

Keeping game fish, especially bass and perch, out of the ponds is a problem, too. It is quite a temptation for boys, fishing in the nearby Bourbon River, to toss a couple of small ones into one of the ponds. With all the minnows they could possibly eat, small game fish could double their size several times in a season, spawn, and completely take over the pond. This might be a way of producing a few big game fish but it would make minnow raising unprofitable.

It doesn't take long to get started in this business. Mr. Haberberger's ponds were made early last fall and stocked a short time later. By the end of March he began to see deposits of fish eggs on boards placed in the ponds for that purpose. The ponds were soon filled with tiny minnows and the stock ready to sell. When cared for properly, minnows grow rapidly and can be marketed the same year they are hatched. With plenty of water and ideal conditions minnows will far surpass the famed rabbit in ability to multiply.

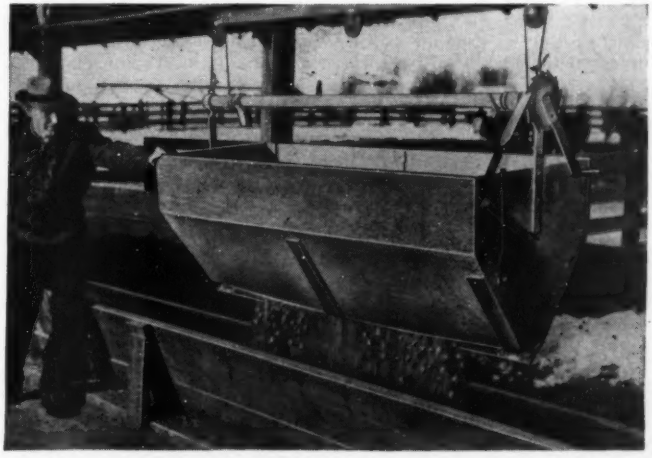


A belt conveyor is used to transfer the feed from the bulk storage bin to the feed bucket. Power is supplied by a ½ hp motor.

# Tailor Made Feeding System

Feeding 150 head of beef cattle their grain ration is a simple task for Alex Bouchey on his farm near Wapato, Washington. His feeding system consists of a gravity-emptying hopper, a conveyor, and a feed distributor bucket mounted on an overhead track. A sketch on next page shows how this equipment is arranged and gives details on the power drive for the conveyor.

The 12 foot square hopper is filled periodically, as needed, through a wall chute by an auger elevator from the delivery truck. When a gate is opened in its bottom, grain pellets drop by gravity from the hopper onto the conveyor elevator. The conveyor belt, powered with a ¼ hp electric motor, delivers the ra-

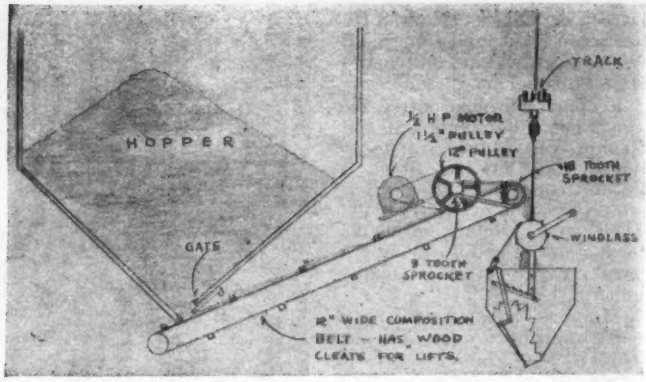


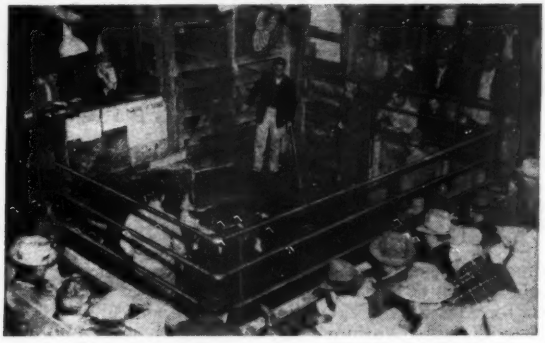
The opening at the bottom of the feed bucket is adjustable. By setting it properly the right amount of feed is dispensed as the bucket travels along.

tions to an 800 lb. capacity bucket.

The feed bucket was built from ½ inch plywood and has a metal frame. It is supported and travels on an angle iron overhead track 200 feet long. The track is supported from the ceiling by iron rods and extends along over the feed bunk.

After the bucket is filled by the conveyor, the bottom opening of the bucket is adjusted for the desired flow with a manually operated ratchet. Then the bucket is simply pushed along the feed bunk while it distributes the grain ration.



# No Cold Feet Here

Most cattle sales barns are too well ventilated to be snug in chilly weather. Buyers who sit faithfully around the show ring get a good case of shivers, but not at Cuthbert, Georgia. They cater to the comfort of cattle buyers at the People's Livestock Market, Inc., in Cuthbert.

This market is owned by approximately 80 stockholders. An estimated 90 per cent of the stockholders are farmers. The sales barn serves six counties and sales are held every Wednesday afternoon. An average day's sale consists of 800 hogs and 125 cows.

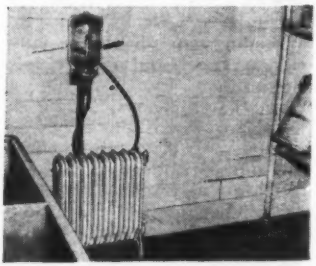
Under each comfortably padded seat in the buyers' circle is a heat lamp with its own control switch. In all, 16 infra-red lamps are installed in the buyers' circle. There are other heat lamps in the auctioneer's pit so that the man who cries the sales and his clerk, as well, will be comfortable.

Here's an idea you may want to duplicate in your neck of the woods. It's boldness that pays off at an auction. You don't want buyers with "cold feet!" With infra-red lamps so easily installed, you can eliminate the problem. WARREN BATEMAN

With the seat raised you can see the placement of the infra-red feet warming lamps.

# Milk House Heat

There are several ways of heating your milk house. J. A. Hook, of Mount Joy, Pennsylvania, likes the electric radiator. It contains a small amount of liquid and a heating element. Steam is produced within it which heats the entire surface. Mr. Hook's unit is equipped with a thermostat that allows him to select almost any temperature from just above freezing to one suitable for working conditions. In case the radiator becomes disconnected, he doesn't have to worry, since the liquid will not freeze. A safety valve prevents development of excessive pressure.



As with other forms of electric heat in the milk house, you don't have to worry about fire hazard. What's more, electric heat is clean and odor free.

---

Signs of the times: This year's Paris Mule Day was canceled in Tennessee. Farm mechanization seems to have taken its toll and even the Tennessee mule is disappearing.

# Comfort from Kilowatts

## Supplemental Electric Heaters Allow You to Have Heat When and Where You Want It

By HAROLD U. WRIGHT

There are many advantages to supplemental electric heating. It is clean, convenient, and automatic. It is quiet, and since no fuel is burned, no gasses are produced. But most outstanding is its flexibility. It has the features of lighting which we accept as the ultimate in convenience. Just flip a switch or set a thermostat, and heat is immediately produced when and where you want it.

Each farm, of course, has its own particular problems, but it will perhaps help to suggest a few uses:

On mild spring and fall days heat is sometimes desired in certain rooms for only short periods. The breakfast room, the bathroom, or perhaps the living room may be the place. If a large heating plant is turned up there is a good chance that it will still be producing heat even after the outside temperature has risen. The house may become uncomfortable and the windows and doors must be opened to cool it off. It is something like driving a tack with a sledge hammer. The large heating plant is designed to keep you warm in the coldest weather and doesn't adapt too well to mild days. Supplemental electric heating is an especially good solution for this problem.

Different rooms in the home demand different temperatures for comfort. The heating plant with only one thermostat cannot effectively provide this. The bathroom temperature should be higher to warm you while bathing. Electric bathroom heaters are now being installed in thousands of homes to provide this extra heat. The infant's room requires temperatures higher than adults prefer, and here the electric heater can easily add booster heat.

On cool, rainy spring days when the children are playing indoors, supplemental heat will provide even temperatures to help prevent unnecessary colds.

Many home owners are omitting furnace heat to the utility room because of its comparative infrequence use. Instead, an electric heater is used to maintain lower temperatures and it is turned up only when work is to be done.

When new rooms are added there is sometimes a problem of running heating ducts to the new space. If it is simpler to run wire, here again electric heat may be the answer.

The heating of farm buildings suggests many applications. The farm shop, milk room, egg-candling room, pump house, or seed cleaning room all may require heat only during certain periods. Seed germinating, motor warming, tank de-icing and pipe thawing all are special applications with which many farmers are already familiar, and there are many more. There seems to be no end to the uses for such a flexible medium.

This same flexibility is reflected in the many forms of heaters which are available. To mention a few: there are the metallic resistor types for recessed and surface wall mounting or the portable models. There are numerous sizes and styles even to baseboard units.

Then there are glass panel models available for the same

**Above:** Mrs. C. S. Reynolds of Moscow, Idaho, finds that a little extra heat feels mighty good when she's sitting quietly sewing or reading. A small portable heater is particularly handy on those days when the central heating plant isn't needed. **Right:** Mrs. Reynolds uses the same portable heater to provide additional warmth in the basement laundry room.

Electric heating units such as the radiant glass type set in the wall here, are ideal for young children's rooms. This is especially important on spring and fall days, when temperatures may be just right for adults, but too chilly or drafty for the youngsters. Kelly Patrick Baxter, son of Mr. and Mrs. Joe Baxter, of Five Mile Prairie near Spokane, Washington, enjoys the added warmth.

types of installations, including the baseboard style. A newcomer to the ranks is one product constructed similar to the glass panels, but utilizing resistance wire imbedded in a ceramic.

Another relatively new developments is a panel composed of two thin layers of aluminum between which is sandwiched a conductive rubber material. This product is applied to the ceiling by adhesive and is quite unnoticeable when in place and painted the ceiling color.

Resistance cables are also available for concealing in plaster or concrete to provide large warm masses and thereby a principally radiant type of heat. These adapt well also to many of the previous mentioned special uses such as a pipe-thawing, seed germinating, snow and ice melting, etc.

The equipment varies in capacity from about 3 watts per lineal foot of cable to many thousands of watts in some of the resistance types of heaters. The most popular heaters, however, are from about 500 to 3000 watts.

Both 115 volt and 230 volt equipment may be obtained. However, most of the heaters larger than about 1650 watts are 230 volt to reduce current flow.

Electric heating seems to answer so many heating problems, are there any complaints arising from its use? Yes, and it is well to pause and consider why. There are two causes for most of these complaints. They are cost of operation and improper installation.

Cost of operation is perhaps the greatest source of annoyance to the user. While many are willing to pay more for its con-

The egg storage room should be kept cool, but that is no relief for the farm wife who must spend hours in the room candling and cleaning eggs. Consequently, Mrs. Henry Bauer, Spokane Valley, uses a small portable electric heater to keep her feet warm while she goes about her work.

venience, electricity is not inexpensive as a fuel. Anyone who makes a thermal equivalent comparison, that is, BTU's per dollar, realizes that there is less heat per dollar in electricity than in most other fuels. Local costs will, of course, vary, but in many areas oil is nearly twice as costly as coal and electricity nearly twice oil costs, from a BTU comparison standpoint. However, this does not take efficiency into consideration. Even though coal and oil produce BTU's less expensively, the large heating plant may produce more heat than is needed on many spring and fall days, and this is wasted. Then, too, many users claim less decorating costs from the cleaner electric heat. Maintenance costs are far less than when fuel burning equipment is used. These are intangible benefits but they may have a bearing and should be considered for a fair comparison.

Proper installation cannot be emphasized too strongly, if supplemental electric heat is to be satisfactory. Fire or shock is possible if the units are not properly installed. A general rule is to provide a separate circuit for each heater and then to install wire of adequate size to furnish safe passage of current through the circuit. Each 120 volt heater should be provided with a circuit of two No. 12 wires (assuming that the wattage is 1650 or less, as is usually the case). This is also true for portable plug-in heaters. Care must be taken not to connect portable heaters to circuits meant to serve other loads.

Heaters that operate on 230 volts require special circuits just as does the electric dryer or range. These are three wire circuits, one of which, the ground, connects to the heater chassis. This grounding is important to prevent possible shock, especially in kitchens and bathrooms. In any case, proper wiring procedure should be followed and you should obtain expert help.

Below is a table showing wire sizes for various 230 volt heaters.

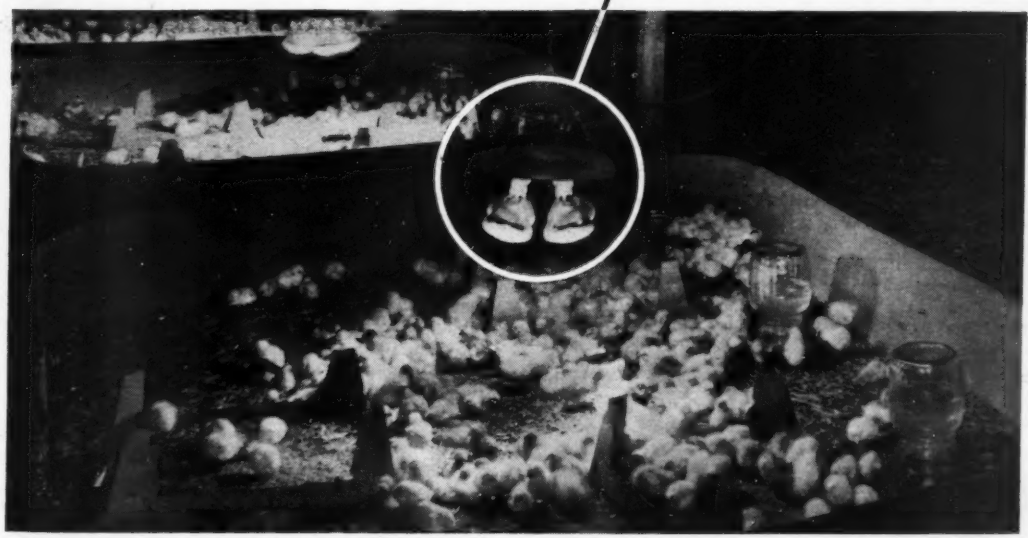
. . . . . (More on page 34)

| Heater Size | Amperes | Wire Size | Max. Safe Length of Circuit in Feet (Main Switch to Heater) |
|---|---|---|---|
| 1500 | 6.5 | 12 | 213 |
| 2000 | 8.7 | 12 | 160 |
| 2500 | 10.9 | 12 | 127 |
| 3000 | 13.1 | 12 | 107 |
| 3500 | 15.2 | 10 | 145 |
| 4000 | 17.4 | 10 | 127 |
| 5000 | 21.8 | 8 | 161 |

# G-E INFRARED LAMPS keep chicks warm, healthy, regardless of room temperature

**RUGGED G-E FILAMENT** produces infrared energy like that given off by the sun. Rays pass directly to the chicks from the lamp without heating the air—become heat instantly when absorbed by the chicks' bodies.

**BUILT-IN REFLECTOR** with a mirror-like finish accurately controls direction of infrared heat rays for maximum brooding efficiency. Chicks can choose own degree of warmth and comfort—will thrive in sub-zero room temperature.



**ABOVE IS A TYPICAL BROODING ARRANGEMENT** with G-E infrared lamps. Its cost of installation is extremely low. And it's easy to install for large or small poultry operations or to supplement your present brooder system.

Learn how you can put infrared brooding to work for you. See your General Electric lamp dealer today.

**FREE BOOKLET!** *To get your copy of General Electric's 8-page booklet "Infrared Chick Brooding", write to General Electric, Dept. 166-EF-11, Nela Park, Cleveland 12, Ohio.*

GENERAL ELECTRIC

# An Adjustable Cattle Feeder

## Does a Two Hour Job in Twenty Minutes

By **DONALD K. O'BRIEN**

"There is no question about it," says Dwight Wise of Fremont, Ohio. "We save lots of labor with our mechanical system of feeding chopped hay silage to our steers. We now do easily in 20 minutes what used to be two hours of hard labor. We just stand and watch it work while the steers are fed."

Wise's silo is equipped with an unloader. It tosses silage onto a cross conveyor elevator 10 feet long, which in turn delivers the silage to a feed bunk 56 feet long. Incidentally, this conveyor is also used to move corn from the wagon to the storage elevator at cribbing time. In this bunk is a slowly moving drag that distributes silage from one end to the other. Thus one man can throw the switches and watch the 55 steers get their silage. Or, he can be doing other jobs while the motors do their work in just 20 minutes.

Before this system was installed, it took one man an hour to throw down enough silage by hand for one day's feed. Then it took another hour of steady walking to carry 50 to 60 baskets of silage to the bunk.

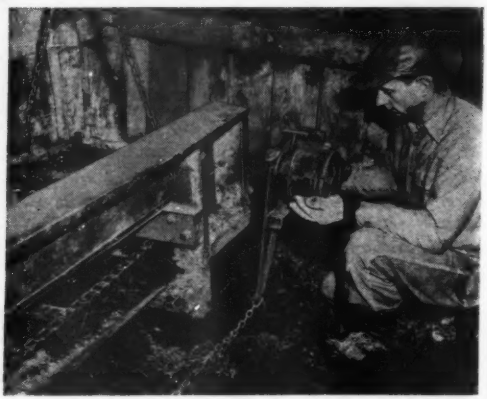
The bunk was installed in a loafing shed 60 by 26 feet along the outside wall of the barn. It is 18 inches wide inside, 8 inches high in front, and 14 inches high on the back side. The Wises built it in their farm shop.

The entire bunk is suspended from the ceiling by chains. They are fastened opposite each other on the bunk and are attached to a 1¼" pipe secured to the ceiling so as to allow it to turn.

The bunks can be raised and lowered by a crank connected to the pipe by worm gears from an old corn binder. This is located in the center of the bunk so that one crank readily raises the whole bunk in one operation. As the manure piles up and the cattle grow larger the bunk is raised. Usually it is raised once a week. Thus, the bunk is always at the right height for the cattle to eat. For cleaning the shed with a tractor-mounted manure loader, the bunk is cranked up to the ceiling.

Inside the bunk are two parallel No. 55 steel link drag chains cross connected with 1 inch square wooden bars that carry the silage. A partial floor, built 8 inches below the bottom of the bunk, is provided for the drag chain's return. Power for the drag chain is supplied by a ¼ hp electric motor geared down through a wagon unloader mechanism mounted on a shaft at one end of the bunk. During the harvesting season, the unloader is used on wagons.

**In twenty minutes this feed bunk can be filled with chopped hay silage or ground feed. Steers shown here are eating ground feed. Note the supporting chains.**



**Above:** This simple device, being operated by Charles Wise, raises the feed bunk as the cattle grow and the manure accumulates. A worm gear from an old corn binder, attached to the crank, turns the pipe from which the bunk is suspended. **Right:** Charles holds the unloader power unit which drives the drag in the feed bunk.

Dwight Wise and Sons say there are a number of reasons why they like this mechanical system of feeding:

1. It saves time and labor and takes the work out of feeding.

2. It saves silage, for the cattle do not waste fluffed up hay silage. When silage is thrown down by hand, it usually is in chunks. In the bunk, a steer will shake a chunk and lose part of it in the manure.

3. It also serves as a grain feeder.

4. The bunk is always clean. As the drag moves along, it cleans out all the dirt in the same way a barn cleaner cleans a gutter.

5. Since the bunk can be raised as the manure pack builds up, the shed needs cleaning just twice a year.

6. The system was inexpensive to build. Total cost was only $124 for the bunk.

In summarizing, Dwight Wise says, "The cost of operating the electric motors is only a trifle compared to cost of hand labor and the time saved. On top of that, we get year-round use from our investment in wagon unloader and cross conveyor."

Dwight Wise says that the silo unloader throws out the silage fluffed up so that it is easy to handle and easy for the cattle to eat. There is a lot less waste than if the silage were thrown down by hand.

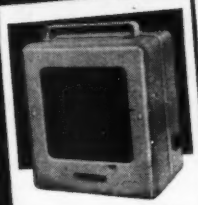
---

Herds of more than 10 cows produce about two-thirds of the Nation's milk supply.


SAFE HEAT ON YOUR FARM

ELECTROMODE
All-Electric HEATERS

FOR YOUR MILK HOUSE



This Electromode Milk House Heater with built-in thermostat provides comfort for milk house chores and prevents water pipes freezing. Fan-circulated heat keeps area dry, preserving milk house structure and aiding ventilation. Makes ideal sanitation possible. Economical to operate. *Many Uses:* Brooder pens, fruit and vegetable bins, and buildings all around the farm.

**SAFETY FACTOR 100%**

All Electromode's have patented, cast-aluminum heating element. No danger of fire, shock or burn. Guaranteed for 5 years. Approved by Underwriters' Laboratories. Safety switch prevents overheating.

FOR YOUR HOME

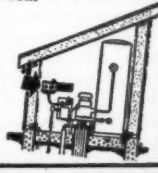
There's an Electromode for heating any room in your home, in wall and portable models. Illustrated above is the automatic wall type heater for big rooms.

FOR YOUR PUMP HOUSE

For economy and safety use the Electromode automatic heater, ruggedly designed especially for the pump house. No frozen pipes; no danger of fire. Thermostatically controlled.

**SIMPLE TO INSTALL**

Wall brackets are provided to mount heater on wall. Only necessary to run two wires (120 or 240 volts as required) to heater connection box.



Mail Today

**ELECTROMODE CORPORATION**
DEPT. EF-114, 45 CROUCH ST., ROCHESTER 3, N. Y.
Please send complete information on Electromode Heaters:
☐ For Milk House. ☐ For Pump House. ☐ For Home.
Name_____
Address_____
City_____ State_____

*Sunbeam*
STEWART CLIPMASTER

**COOL, EASY-RUNNING ANIMAL CLIPPER**

Clip your animals the fast, easy way with the new *electric* Clipmaster. It's the clipper with the quiet 30% *more powerful* motor with 25% *greater speed* inside the Easy-Grip handle. $39.95 (Colorado and West, $40.25). Handy Grooming Brush attachment for Clipmaster does more thorough job of cleaning dairy cattle. *Write for information on Sunbeam Stewart clipping equipment.*

SUNBEAM CORPORATION (*formerly* Chicago Flexible Shaft Company)
Dept. 30, 5600 W. Roosevelt Rd., Chicago 50, Ill.

# Dialing the Right Mix

## It's as Easy as Tuning in a Radio Program with the New Type of Mixing and Grinding Mill

By RALPH BOWEN

What method of feed preparation do you use for the livestock on your farm? Perhaps it's one of these three time honored methods.

One way is to use the services of a custom mill in some nearby village or town. You take home grown grain to the mill where you purchase the various concentrate supplements needed to make a satisfactory ration. After the grain is ground and the supplement mixed with the grain, you have the job of hauling the feed home—usually in heavy bags. The cost runs high—usually from 8 to 12 cents per bag—and you often waste valuable time waiting in line for your turn at the mill.

Another way is the use of a portable custom mill which comes right to your own premises. These mills usually have a fixed route and most of them are equipped to grind ear corn and grain. Concentrates must be delivered before the mill arrives to do the grinding and mixing. These services usually cost more than the previous method, but you save the time and labor of hauling grain to and from mill.

The third way involves the use of your own grinder—usually powered by a large tractor. Because the job of setting up the mill and getting corn, grain, and concentrates together is a big one, farmers who use this method usually grind a supply large enough to last several weeks. After grinding, measuring and mixing grains and concentrates to complete the ration may require a great deal of time consuming hand labor. However, if you have your own batch-feed mixer, a more satisfactory job of mixing can be obtained. But even with this piece of equipment, the grain must be weighed or measured—and many times it is sacked as it comes from the mixer. Therefore, the saving in labor over the second method is very small.

Now, there is also a fourth method! After years of experiment, a commercially practical "mix-mill" unit is on the market. The new unit handles the complete grain and feed mixing and grinding process automatically. With no more work than it takes to flick a switch, it does it at about 1/10 the cost of doing the job by old fashioned methods.

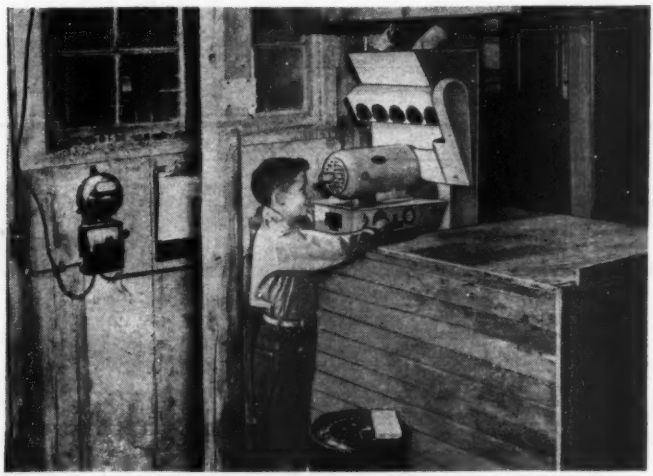
The mixing-mill has four hoppers, each of which has a screw feeder. Twenty-five rates of feed can be provided for each of the four screws, by merely turning one of the four dials. A fifth dial is used to control the total amount of material fed to the mill. A small ammeter on the mill makes it easy to adjust the feed flow to a point that will not overload its 2 hp motor.

When the feed proportion has been determined, the dials are set. The various components are metered directly into the hopper of the mill. There they mix as they are ground. The freshly processed ration is delivered to a feed cart or bin ready for use. An automatic timer controls the mix-mill, so that, after the first feeding has been ground, the farmer knows exactly how long it takes. He can then set the timer to control the whole operation automatically.

The real test for any such piece of equipment comes when it is put to work under actual farm conditions. Let's take a look at what different types of farmers, who are using the mill, think of it.

### About the Cover

**Frank Mikul, Granville, Wisconsin, is setting the timer on his mix-mill. The storage bins are on the floor above and they will be filled by an elevator as the new grain is threshed. The spouts which carry the grain and concentrates are four inch round downspouts with adjustable vent pipe elbows.**



**On Norbert Linssen's farm, near Green Bay, Dennis Linssen grinds the feed and mixes the ration for his father's herd. The box below the mill covers the feed cart.**

### Poultry Feeding

We'll start at the Frank Mikul farm near Granville, Wisconsin, where about 25 tons of poultry feed are used each year. Mr. Mikul first became interested in the mixing-mill because he

wanted to find some way of eliminating the heavy and time-consuming burden of hauling grain to and from a custom mill every other week. He first considered using a motor operated hammer mill and a batch feed mixer. However, when he checked up on costs, he found that the mixing-mill would cost less to install and would take a great deal of hand labor out of the total job.

Even though the actual cost of grinding Mikul's grain at the custom mill amounted to only $46.50 annually, he figures that the mixing-mill's savings will pay for itself, and its installation, in about a year's time. Here is the way he figures it.

**Annual Savings**

| | |
|---|---|
| Saving by buying in ton lots | $101.65 |
| Saving from custom grinding 25 tons @ $1.86 | 46.50 |
| Saving in labor—25 half days or 100 hours @ 2.00 hr. | 200.00 |
| Saving in truck mileage—25 ten mile round trips @ 10c per mile | 25.00 |
| | $373.15 |

Mr. Frank Harmann, Sturtevant, Wisconsin, uses his mix-mill to grind feed for pigs. The oats and shelled corn are stored above. As the grain is measured, mixed and ground, it falls in the bin below for feeding. The four dials, starting from the left, control augurs for each of the four chutes. The fifth dial varies the speed with which the mixture of grains is fed to the mill.

As he buys his concentrates, middlings, and alfalfa meal by the ton, instead of by the batch at the mill, he makes a substantial saving. On an annual basis it amounts to $20 on concentrates (5 tons @ 4.00), $30 on middlings (5 tons @ 6.00), and $51.65 on alfalfa meal (2½ tons @ 20.66).

The cost of electricity for the grinding amounts to 20¢ per ton. Deducting this cost of $5.00, for the 25 tons processed, an annual net saving of $368.15 is achieved. The investment needed to achieve these savings amounted to $423.50, of which $25 represented installation cost.

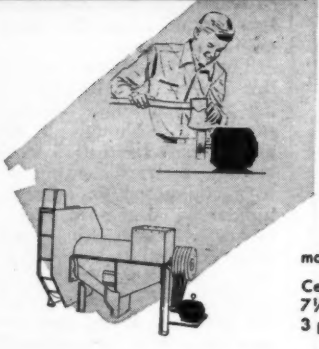
These figures include only those costs for which Mr. Mikul could fix an actual price. However, he points out that there are other advantages which will result in still further profits. For example, when he hauled grain to the custom mill, he found that the chickens ate the freshly ground feed much better than the same feed after it had been stored at the farm for two weeks. He feels there's an extra value in fresh-ground feed.

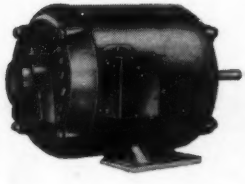
Another important factor, according to Mikul, is the fact that at times when weather con-


TAKE THE BACK-BREAK OUT OF FARM CHORES

Own a team of reliable "Farm Tested"

Century MOTORS





"Farm Tested" for more than 50 years, Century Motors, are saving farm labor all over America—pumping water... drying hay... grinding feed... hoisting heavy loads... powering refrigeration equipment... making light work of dozens of other tough chores.

Tough and ready, Century type R. S.—Repulsion start, brush lifting, single phase motors. They have high starting torque with low starting current.

Century type R. S. motors are offered in sizes ½ to 7½ H.P.—Capacitor motors ⅛ to 7½ H.P.—Century 3 phase motors ½ to 400 H.P. are available.

Ask Your Dealer for

Century C MOTORS

CENTURY ELECTRIC COMPANY 1806 Pine Street, Saint Louis 3, Missouri

829

ditions are right and he can be more profitably engaged in planting or harvesting a crop, he won't have to stop and make that trip to the mill.

At the present time, the bins in Mikul's barn are filled by hand. However, he plans to have an electric elevator installed so that the grain and concentrates can be delivered to any of the bins automatically. The corn, stored at a different location, is shelled with a custom sheller, and it will be delivered automatically to the bins above the mixing-mill. The elevator will also be used to deliver ground feed to automatic feeders he plans to install on the second floor of the barn.

### Dairy Cattle Feeding

Norbert Linssen's dairy farm is located near Green Bay, Wisconsin, where he runs a herd of about 60 milk cows. Prior to the delivery of a mixing-mill unit about a year ago, the grinding and mixing for his herd was usually done in the granary, about a hundred feet from the barn. The grain and concentrates were measured by the scoopful in the hit-or-miss manner used by many farmers—two scoops of this—and a scoop of that—as the ration was ground.

According to Linssen, wind and dust made the process a very hard and unpleasant one. It was a job that he, and especially his two young sons Dennis and Randy, just hated to do. Like most farmers, Linssen wants his sons to like farming and to stay with him. That's why he believes in using modern equipment to make farm life easier, better, and more profitable. He already has an automatic gutter cleaner, and plans on changing to bulk milk cooling and pipe line milking in a short while.

Linssen admits that when the mixing-mill was delivered, he found it hard to believe that such a small unit could grind and mix enough feed for his large herd. He found out quickly, however, that it could. Actually it grinds enough freshly mixed ration for his herd by running only 12 minutes a day. Test meters showed a daily electrical usage of less than ½ kwhr and mixing and grinding cost was under a cent per hundred pounds. Linssen says, "As far as I am concerned, the mixing-mill system is the only system of grinding for a successful dairy farmer."

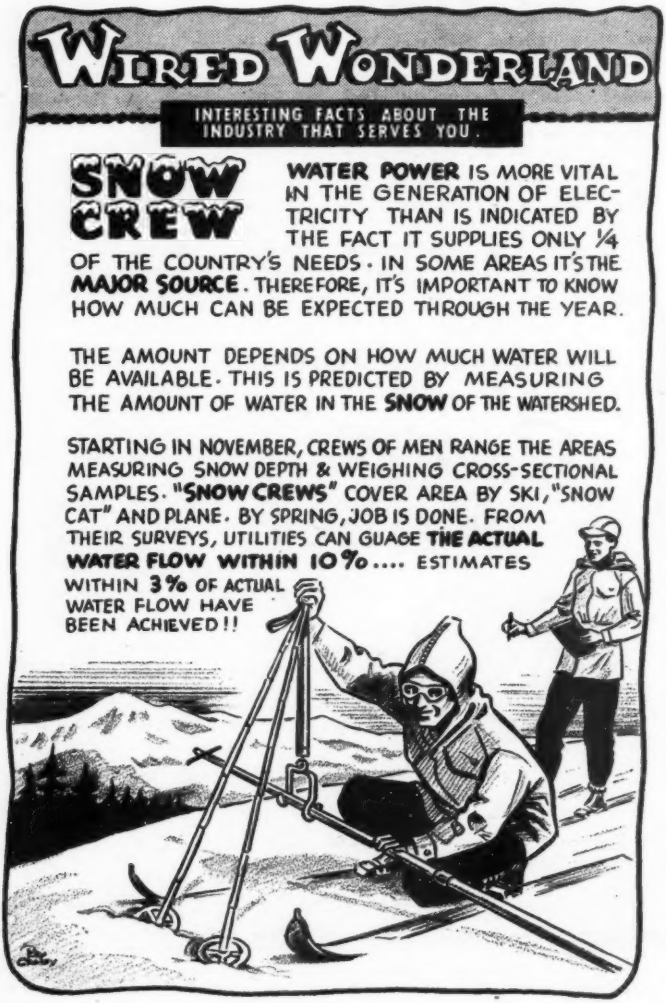
### Hog Feeding

Racine county farmer, Frank Harmann, uses a mixing-mill to make hog feed. He grinds 400 to 500 pounds of ration each day, composed of three parts oats and one part shelled corn. It is ground rather fine—he uses a ⅛" screen.

The grinding time needed for this job on the Harmann farm has averaged about 30 minutes per day. Although a check meter hasn't been used to show actual electrical consumption, tests conducted on other units indicate a usage of about 30 kwhrs of electricity a month when operated 30 minutes a day. This means that Mr. Harmann's electrical costs for grinding and mixing hog ration with a mixing-mill unit amount to about a half a cent per hundredweight.

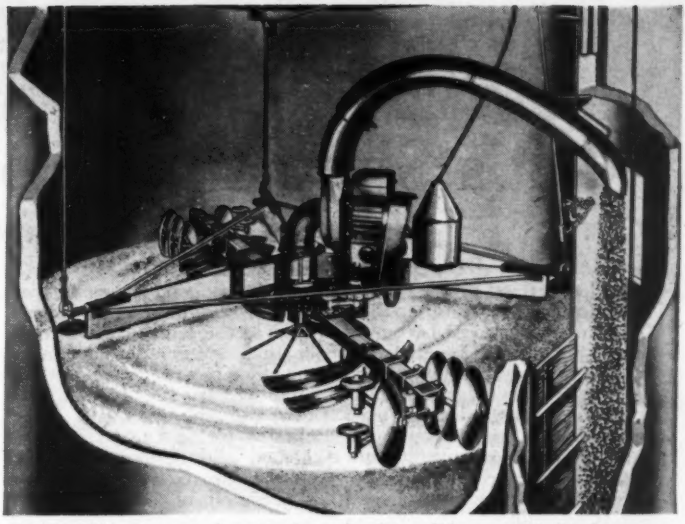
This new method appears to

. . . . . (More on page 34)


WIRED WONDERLAND
INTERESTING FACTS ABOUT THE INDUSTRY THAT SERVES YOU.
SNOW CREW
WATER POWER IS MORE VITAL IN THE GENERATION OF ELECTRICITY THAN IS INDICATED BY THE FACT IT SUPPLIES ONLY ¼ OF THE COUNTRY'S NEEDS. IN SOME AREAS IT'S THE MAJOR SOURCE. THEREFORE, IT'S IMPORTANT TO KNOW HOW MUCH CAN BE EXPECTED THROUGH THE YEAR.
THE AMOUNT DEPENDS ON HOW MUCH WATER WILL BE AVAILABLE. THIS IS PREDICTED BY MEASURING THE AMOUNT OF WATER IN THE SNOW OF THE WATERSHED.
STARTING IN NOVEMBER, CREWS OF MEN RANGE THE AREAS MEASURING SNOW DEPTH & WEIGHING CROSS-SECTIONAL SAMPLES. "SNOW CREWS" COVER AREA BY SKI, "SNOW CAT" AND PLANE. BY SPRING, JOB IS DONE. FROM THEIR SURVEYS, UTILITIES CAN GUAGE THE ACTUAL WATER FLOW WITHIN 10%.... ESTIMATES WITHIN 3% OF ACTUAL WATER FLOW HAVE BEEN ACHIEVED!!

A well known HIGH FLYING transportation company gives THIS description of THEIR AIR-LINE: "the SMARTEST distance between two points." . . . . And here's a few daffynotions from here and there: TELEVISION—SQUARE GLARE . . . ALIMONY—BOUNTY on the MUTINY . . . SHINDIG—a signal used by bridge partners . . . NIGHT-SHIRT—NAP SACK . . . PAWN-BROKER—a TIME KEEPER . . . . We overheard this on a cross country bus: "Whatcher favorite readin'?" "Popeye, Superman an' Lil Abner." "Howye like O. Henry?" "No good. The nuts get in my teeth." . . . . Tops on the MOTH HIT PARADE—"You came to me from out of Mohair." . . . . We know a gal and her boy friend who NEVER miss a mystery show. Apparently they love each shudder. (Caw! Caw!) . . . . LIMERICK DEPT.: Said an envious, erudite ermine, "There's ONE thing I can't QUITE determine; When a DAME wears my coat, SHE'S a person of note; When I wear it, I'M called a VERMIN!" . . . . According to Bennett Cerf, American Airlines reports that a lady taking her first plane ride was offered a stick of gum by the hostess. "It's for your ears," volunteered the latter. The passenger stopped her on her way through the cabin some minutes later. "It SEEMS to be O.K." she reported, "but COULDN'T you find SOMETHING a LITTLE less STICKY?" . . . . SNICKER-SNORT-OF-THE-MONTH: Two small boys, spellbound, had their noses pressed up against the barbershop window. The barber was giving his customer a hair singe. The taper and shears moved expertly over the man's hair. "Holy cats," exclaimed one boy to the other, "lookut what he's doin, he's searchin' fer 'em with a FLAME THROWER."....Riddle: "WHAT do cannibals do with the heads of their victims?" ANSWER: "They make NOODLÆ soup." . . . . HEIGHT of INDIFFERENCE: when you see something black in your pudding and don't care if it's a fly or a raisin . . . . CYNICAL HISTORY OF AMERICA—The passing of the buffalo, the passing of the Indian, and—the passing of the buck . . . .

Your pun-peddler—DUFFY.

Extra weight, more rugged construction and wall-to-wall booms enable this Jamesway silo unloader to cut through any silage, including frozen grass, and keep the surface even. The result is fast, trouble-free operation, longer equipment life and less spoilage.

## Handle twice the cattle *easier* with Jamesway POWER CHORING

Now, you can care for twice the cattle per man — do the job easier and better — with Jamesway Power Choring. That's why it's as practical for your barn and feedlot today as the tractor in your field.

Jamesway's Twin-Boom Silo Unloader alone saves you 200-400 hours every year. Wall-to-wall booms double the cutting action — 3-point suspension prevents "dipping" into unfrozen silage while riding over frozen spots.

This, plus heavier, more rugged construction than any other unit on the market, explains why the Jamesway unloader skims off *any* silage evenly . . . frozen or unfrozen. It mixes the silage thoroughly for better palatability. Cuts spoilage and feed waste. Sends down silage while you do other chores — at an operating cost of about 2¢ a ton.

Get details from your dealer. Let him show you how Jamesway's complete line of stalls, pens, windows and Power Choring equipment will modernize your barn for the extra income you need to maintain profits today. For free Power Choring folders, write the JAMES MFG. CO., Dept. EF-1154, c/o your nearest branch office.

Jamesway

Ft. Atkinson, Wis. Mount Joy, Pa.
Los Angeles 63, Calif.

FIRST IN POWER CHORING (T.M. Pend.)

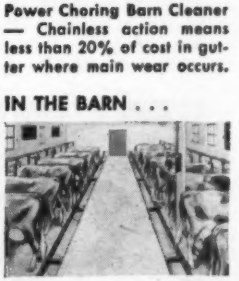
IN THE FEEDLOT . . .

Power Choring Cattle Feeder — chainless, economical delivery from silo to feed bunk.

IN THE GUTTER . . .

Power Choring Barn Cleaner — Chainless action means less than 20% of cost in gutter where main wear occurs.

IN THE BARN . . .



Jamesway Power Ventilation — removes moist, stuffy, stinky air. Boosts milk production by up to 5%. Promotes health of your herd.

# Let's Shop for a Food Mixer

## They'll Save You Hours of Work

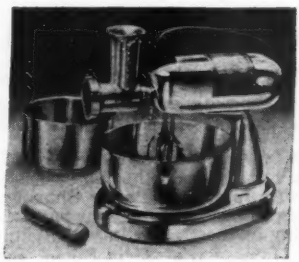
An electric food mixer, the energy saver in preparing "beaten" foods, is fast becoming a "must" for kitchen efficiency. Streamlined present day mixers, with their sisters, portable mixers, and cousins, blenders, have released the homemaker from many time consuming, fatiguing, and menial chores.

From the many types of food mixers available today, you can find one to suit your needs and methods of work. The wide range of speeds for regular mixers varies from two to twenty. Many of these are not only numbered but also have a listing of each ones use. On most mixers speed controls are on the side for control with the thumb. A couple of manufacturers have these controls centered for use by a right or left handed person.

Some mixers are powerful enough to knead heavy dough. These have larger motors with a power over 400 watts and special kneading attachments. The regular mixers range from 120-150 watts and are built to furnish full power at all speeds regardless of stiffness of dough.

Heads are detachable on most models shown today. This enlarges their use, as they may be carried to the range for beating while cooking. In all models the head tilts back or lifts for drainage of beaters.

Beaters are the most important attachment as more than half of the mechanical operations in the kitchen are mixing, beating, creaming and kneading. One manufacturer uses one large beater, the average uses two, and one uses three. These chrome plated beaters are oval shaped and designed to fit in the head to cover full diameter and contour of the mixing bowl. Some are attached separately and others in a single frame.



Dormeyer

Beaters are easily removable by snapping them out or pressing a button release.

Bowls, next in importance, are made of frosted glass, clear glass or stainless steel usually with straight sides. Most makes have two different sized bowls as standard equipment.

The bowls set on an adjustable turntable, which rotates with dough heavy enough to create friction. One model automatically mixes from center to edge of either large or small bowl. On some the bowl may be shifted by a bowl shift lever while the beaters are turning. Others have two slots into either of which the turntable is placed to fit the bowl size. A couple of mixers feature off-centered beaters to provide pouring space and coverage of the bowl.

A few mixers have a turntable device that adjusts height of beaters to change in bowl, while on others the beaters automatically adjust. One has a self adjusting arm, where the head clicks into position for bowl and a bowl size indicator tells if beaters are set right.

Most mixer attachments can be selected according to family needs. A juicer is standard equipment for some, while on others it is an extra for under $5. Made of glass, plastic or metal, it can be separated for easy cleaning. The meat grinder, included on one model, grinds and chops meats, vegetables, or fruits. Some makes require a separate power unit for the meat grinder and slicer and shredder. The grinders sell for around $7 and the power units from $5 to $10.

The slicer and shredder, selling for $6 to $9, slices, and crushes vegetables, grates chocolate and cheese, and crushes ice.

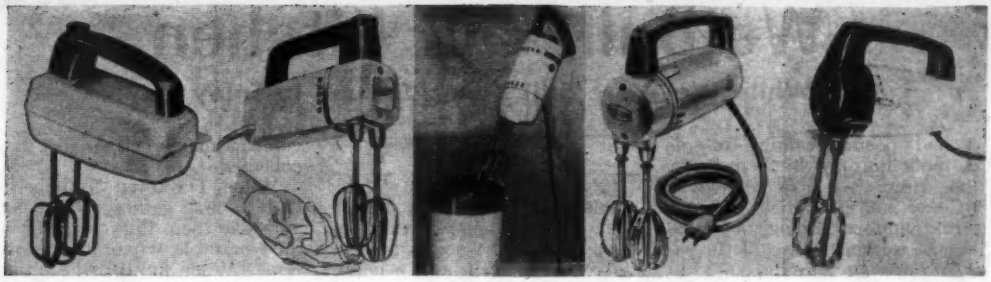
Kitchen Aid

Hamilton Beach

Sunbeam

General Electric

Westinghouse



Westinghouse Oster Manning Bowman West Bend Universal

Other available attachments, which vary with type of mixer, are colander, can opener, ice cream freezer, knife sharpener, potato peeler, bean slicer, coffee grinder, polisher, pea sheller, buffer, ice chipper, oil dropper for mayonnaise, whisks of fine wire, flat beaters, agitators of various sizes, pastry knife, and dough hook.

Beaters and bowls are standard equipment of food mixers. Some manufacturers include juicers, while others sell them separately. One also includes a grinder in the initial equipment. Type and number of attachments included, material used, and motor power varies the cost of standard mixers from 30 to 58 dollars.

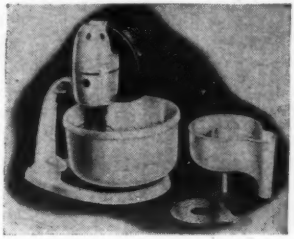
Portable mixers are designed for the person doing only a small amount of mixing and with light batters. This mixer will perform all the mixing, beating, whipping and blending chores of its big sister, except for heavier doughs and larger quantities. These mixers are completely portable and may be used with any type of bowl or cooking utensil. Their lightness of weight, less than 3 pounds, makes them ideal for this purpose.

While most have handles on the top, one has a handle that fastens to the top or end to suit the user. This one fits into a storage bowl that doubles for mixing. One model does not use a handle, but is designed to fit the shape of the hand.

With a power range from 50 to 100 watts, they have 3 to 5 speeds with controls operated by the thumb of the holding hand. They, too, have full power on all speeds. One portable mixer has a stop and go switch separate from the speed control, the rest combine the controls.

Beaters, either small or full size, can be snapped in or out or released by a lever control, just like their big sister mixers. One portable has been designed with the beaters adjusting automatically to the contour of the bowl. Many will operate with one beater to mix a beverage in a glass. All have heel rests so that they may be set down and the drippings allowed to fall into the bowl.

A couple of portable mixers have rubber base guards to prevent bowl chipping and allow



Birtman

them to rest on the bowl during mixing. All have some provision for hanging on the wall, either by means of a hook or a bracket. Their small size also makes them ideal for drawer storage.

Portable mixers can also blend into the kitchen color scheme, as one manufacturer is providing a selection of six different colors on the motor head cover. These lightweight handy appliances sell for 17 to 20 dollars.

A cousin to mixers, the blender, mixes, beats, purees, whips, churns, aerates, pulverizes, shreds, grates, liquifies, chops and grinds. This versatile appliance, known for making baby and junior foods from fruits, vegetables, and meats, not only prepares various drinks, but blends soups, sauces, salad dressing and light batters. It also constitutes milk solids, powders granulated sugar, shreds or pulverizes dried cheese, crumbs bread or crackers, shreds coconut, aerates juices, and grinds nuts, coffee, and whole wheat.

Blenders are equipped with stainless steel cutting units. Some of these will fit into fruit jars, thus the mixture may be stored in the same container in which it is blended. A new feature of one model is a serrated edge to the cutting blade.

Most containers are glass with full quart capacity and vary in shapes to fit the cutting blade movement. One has a handle to use in pouring like a pitcher and another has cup markings. Most have two section tops to permit adding ingredients while the blender is operating.

Enamel, plastic, copper or chrome bases have rubber feet to grip work table or counter top. The blenders are low enough to fit under cabinets over work area and take only 4 or 5 square inches of counter space.

Some operate on one speed with others using two or three. Speed, as well as length of time of operation, determines fineness of cut. Selling from $15 to $50, they range in power from 200-230 watts.

Method of cleaning blenders varies. Some may be cleaned by separating and removing all parts, while others, according to manufacturer's instructions, may be cleaned by adding a little water and detergent and turning them on.

A newcomer to the group of appliances is the plastic juicer, . . . . . (More on page 27)

# We Built Our Kitchen

## While We Were Still Young Enough to Enjoy It

By **RUTH EVERT**

I had been dreaming of remodeling my kitchen for a long time. My first desire was to have a bright, cheerful room with windows facing the barn area. I wanted to be able to see a car driving into the yard, to watch our three girls at play, and to know when John or one of them was calling. Because a farmer's wife spends so much time in the kitchen, I wanted one that was enjoyable and pleasant.

The old kitchen in our farm home in Pewaukee, Wisconsin, was an old story. It was a room off by itself in the back of the house, where it was impossible to see or hear anyone or anything. A car could drive into the yard without my knowing it. It has happened that egg customers have driven in for eggs and, seeing no one, have driven out again without coming to the door. The first I would know of it was when one of the girls would ask, "Who was here?"

This old kitchen was very unhandy. An old wooden built-in sink, on one wall, and a chimney made it impossible to rearrange appliances to save steps. Each appliance, sink, range, and electric refrigerator had to be on a separate wall with no work space between. I don't know what I would have done without the good sized pantry with open shelves, where all the dishes were kept. Of course, you can imagine all the dirt they collected.

When I wanted to bake, I had to first gather all utensils and take them to the kitchen to the worktable, where mixing was done. When finished the dishes were washed at the sink, built much too low, put in a cart with rollers, and rolled back into the pantry. I walked miles.

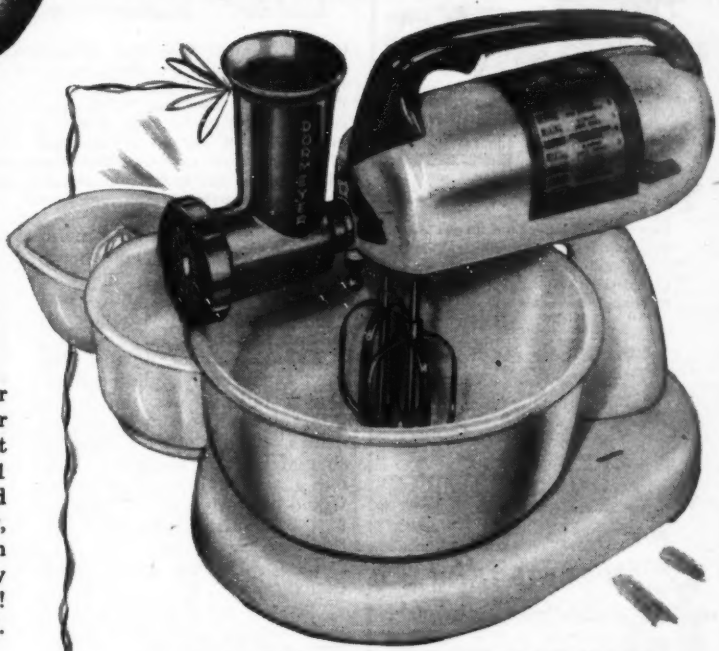
This old pantry is now my new kitchen. A casement window over the double bowl sink and another on the north wall, next to the range, make it possible to see out. Both the men's wash-up sink and my new one have softened hot and cold water. The electric range and refrigerator were moved in and arranged in the U shaped unit with plenty of well planned cabinets and counter space between. Baking, cooking and washing dishes is much easier with well planned cabinets and counter spaces near appliances.

Every woman needs to plan storage space for her kitchen so equipment fits and her requirements are fulfilled. The way you live determines amount and kind of storage space needed.

With two school lunches to pack every morning, the area near the refrigerator is used for storing things used in preparing lunches. Butter and sand-

**Above:** Lack of work space in the old kitchen made it very unhandy. Here Mrs. Evert tries to save steps by using a cart. **Right:** Rearrangement of appliances with counter work area and storage space between has provided a more efficient kitchen. The double sink with its softened hot and cold water was set in at the right height for Mrs. Evert.

# Dazzle Your Dear on Christmas with DORMEYER



Take a real load off your wife's shoulders with either of these beautiful, efficient Dormeyer appliances. 3-in-1 Power-Chef Mixer ends hand operations of beating, grinding, juicing. The Steam and Dry Iron will actually save hours of work weekly! Fully guaranteed.

## 3-In-1 POWER-CHEF MIXER

Complete with 2 mixing bowls; juicer, strainer; 2 nickel-chrome beaters; food grinder and pestle. Has 10-speed dial selector. Mixes foods thoroughly, for wonderful texture and flavor. Free recipe book included. Model 4201 **$45.75**
Also available in gleaming chrome. Model 4300 **$52.75**

## Steam and Dry IRON-WELL

Holds 8 full ounces regular tap water. Safest steam iron available because steam vents close when iron stands on end. Irons "dry" at the push of a button. Has full view fabric indicator dial for heat control. Chrome-plated steel shell, cast aluminum sole-plate. 7 steam vents. Weighs less than 4 lbs. Model 12 **$18.95**

**DORMEYER CORPORATION, Chicago 10**

# WHICH WATER SYSTEM IS BEST FOR YOU?

## only GOULDS offers all 3:

### ✔ TANKLESS

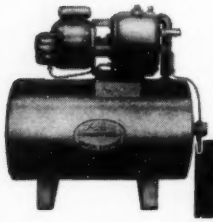
The *only* complete shallow-well water system that needs no tank! Gives instant flow of really fresh running water, adjusts automatically to deliver exact flow wanted. Trouble-free, quiet, only *one* moving part, can't lose its prime.

*No other pump like it!*

GOULDS balanced-flow jet

### ✔ TANK-MOUNTED

Easy-to-install jet systems for shallow or deep wells. Inexpensive, yet have all Goulds quality features for years of good service. Complete with tank and all accessories at surprisingly low prices!

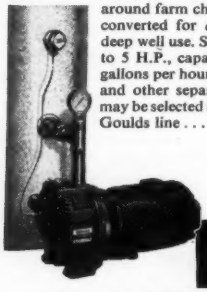


*Nothing else to buy!*

GOULDS "Packaged" Jet Pumps

### ✔ SEPARATE TANK

Jet-O-Matic — the favorite, all-around farm champion—may be converted for *either* shallow or deep well use. Sizes from ½ H.P. to 5 H.P., capacities up to 4100 gallons per hour! Multi-stage jets and other separate tank models may be selected from the *complete* Goulds line . . .



*For either shallow or deep wells!*

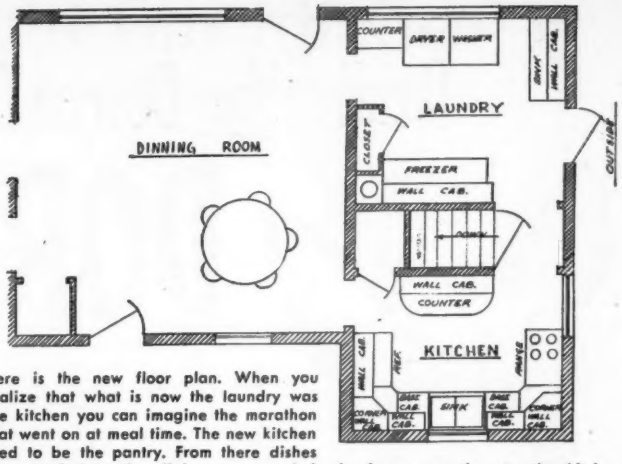
GOULDS Jet-O-Matic

**See your Goulds dealer or Mail this Coupon Today**

**GOULDS PUMPS INC.**
**Dept. E-48, Seneca Falls, N. Y.**
Enclosed is 10¢ for 20-page booklet telling how to select correct water system. Include name of nearest distributor.

Name.....

Address.....


Here is the new floor plan. When you realize that what is now the laundry was the kitchen you can imagine the marathon that went on at meal time. The new kitchen used to be the pantry. From there dishes were carried to the dining room and foods, for preparation, to the kitchen. When a meal was over the whole routine was reversed. In the new set up, everything is right at hand. There are also plenty of work surfaces—and windows which look out over the farm yard.

wich fillings are handy. A metal lined drawer holds homemade bread ready to be made into sandwiches. A pull out board over bread drawer is handy for cutting bread.

A base cabinet next to the stove opens with a sliding door. This cabinet stores the waffle iron, electric toaster, casserole dishes, and other irregular shaped cooking utensils. Without a sliding door, this corner would be wasted space. Drawers in the electric range store kettles used every day.

There are the usual partitioned cutlery, towel, and apron drawers. Each of the upper cabinets has two half shelves and three full shelves.

Hardly a day goes by that I don't bake something; bread, rolls, cookies, cake, or pies. The baking center is placed on the wall directly opposite the sink. This is a lower counter to make it less tiring for working. Here also is an outlet for the electric mixer.

The upper shelf in this cabinet is divided with removable partitions for bread pans, cake tins, muffin pans, etc. Two half shelves at the bottom hold spices. In each of the rounded ends of the base cabinet are more partitions for cookie sheets, cooling trays and other baking supplies.

The kitchen is also equipped with an exhaust fan over the range to rid the room of vapors. Thus, new kitchen walls and ceiling will not only stay clean longer, but cooking odors will not linger in the house.

We are now enjoying all the pleasure possible from our remodeled kitchen.

An exhaust fan over the range removes all kitchen vapors and odors. Note the mixing center on the left. This is lower than other counter tops and only a step away from the range. Behind young Miss Evart is a sliding door base cabinet for appliance and utensil storage. There is no waste space in this kitchen arrangement planned by its user.

# Roast Turkey Faster

## Use High Temperature with Aluminum Foil

The Thanksgiving turkey can now be roasted in quicker time. This is possible by wrapping the bird in aluminum foil and roasting at 450° F. This method has virtually cut the time in half and results in as juicy, tender, and flavorful bird as the lower temperature.

Besides holding in juices, foil wrapping eliminates need of turning the turkey or use of a rack or special equipment.

**Time Table For Cooking Foil-Wrapped Turkeys at 450°F.**

| Turkey Weight (without stuffings or giblets) Total Cooking | Total Cooking Time (hours) |
|---|---|
| 8 to 10 lbs. | 2¼ to 2½ |
| 10 to 12 lbs. | 2¾ to 3 |
| 14 to 16 lbs. | 3 to 3¼ |
| 18 to 24 lbs. | 3¼ to 3¾ |

Here are the directions for roasting the bird at the new high temperature:

1. Prepare the turkey for roasting as usual. If a frozen turkey is used, it should be defrosted. Do not stuff the turkey. Tie legs to tail. Trim off excess neck skin and tuck remainder under turkey.

2. Wrap turkey carefully, making sure there are no holes in the foil. Place the turkey in the center of a large piece of heavy duty 18 inch wide foil. If the turkey is over 14 pounds, use two pieces of foil, joining them with a tight double fold which has been smoothed flat. Place pads of foil over wing tips and joining of legs to tail to prevent punctures. Bring foil over turkey and overlap edges by 3 inches. Do the same on sides of turkey. Always have underneath foil folded over top foil so juices will not leak into the pan.

3. Place turkey in an open roasting pan and roast in a hot oven 450° F. according to the adjacent chart.

4. Turn back foil 20 minutes before the cooking period is over, to permit turkey to take on a richer brown and "crisp" the skin.

5. Prepare the stuffing according to your favorite recipe and bake in a casserole for the last 25 minutes of the roasting time.

6. Gravy: When the turkey is done lift to a warm platter. Pick up the foil and pour off the juices into a saucepan. Skim off the fat. If it is not brown enough, cook down until it caramelizes to a rich brown color, about 20 minutes. Add broth from giblets which have been seasoned and simmered in 3 or more pints of water until tender, to make desired amount of gravy and thicken with a paste of flour and water. Add seasoning to taste and chopped giblets, if desired.


Now you can stop worrying about RAW MILK DISEASES

Have SAFE Pasteurized Milk with

HOME HEALTH HOME PASTEURIZERS

Milk from tested cows, handled with the best of care, may still contain germs causing undulant fever, typhoid fever, polio and other diseases. Home-Health Pasteurization destroys these harmful bacteria but doesn't destroy nutrition of milk or spoil its flavor. You can pasteurize milk in your own kitchen.

ONLY HOME-HEALTH OFFERS TWO, EASY TO USE, SIZES

FOR LARGER FAMILIES. A two gallon pasteurizer that's compact and light-weight. Positive bacteria kill without loss of flavor. Dual heat principle. Just turn it on . . . it's automatic. Laboratory tested.

FOR SMALLER FAMILIES. Popular one gallon size gives same positive pasteurization. Accurate timer-thermostat. No watching or stirring. Convection Heat Principle. Both models guaranteed for one year . . . Underwriters approved . . . Accepted for advertising by Am. Medical Assn.

FREE FOLDER Get the facts on milk-borne diseases and their prevention through pasteurization. Write

WATERS CONLEY COMPANY, INC.
Dept. E Rochester, Minnesota

Tell your dealer you saw it in ELECTRICITY ON THE FARM Magazine

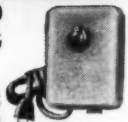
only Monarch has this stoopless oven (plus regular oven)

This amazing Monarch "Color-Vu" Electric Range has a patented "deep-heet" oven built into the range top. It's perfect for vegetable dinners, baked beans, sauerkraut and spare ribs, fowl, baking biscuits and cookies—and as a warming oven. No stooping. Just lift the cover and there's your food! Also full-size regular oven.

*See your Monarch dealer or write*
MONARCH RANGE COMPANY
7044 Lake Street Beaver Dam, Wis.

EARN MONEY WITH
Paragon
LIGHTING CONTROLS

$20 to $50
EXTRA EGG
INCOME
Per 100 Layers
EVERY YEAR!



ONLY
MODEL 4-AM
EARLY BIRD $9.95

Easy to Install — Just Plug It In!
For Morning Lighting Only.

Yes...you can easily get from $20 to $50 MORE EGG INCOME from every 100 layers every year—*with less feed cost per dozen eggs!* Amazing results thoroughly proved by Dept. of Agriculture figures and by Cornell University experiments. Give layers more vital stimulation in fall, winter and spring . . . get more top-profit winter eggs. There's a Paragon Model for ANY lighting program — AM only; PM only — or *both* AM and PM.

*Paragon* ELECTRIC COMPANY
TWO RIVERS, WISCONSIN
AMERICA'S LARGEST EXCLUSIVE MANUFACTURER OF TIME CONTROLS

DRAINS Cellars, Cisterns, Wash Tubs; Irrigates your Garden, etc.

"TYPE P" Pump has 1,001 year 'round uses—house, garden, farm. Pumps 2400 GPH, 360 GPH 75' high or 1500 GPH from 25' well. Use 1/6 to 3/4 HP motor. DOES NOT CLOG! Postpaid if cash with order (West of Miss. add 50c) motor coupling included.

MONEY BACK GUARANTEE
LABAWCO PUMPS $6.95
Belle Mead 49, N. J.

LOOK BETTER
FEEL BETTER

USE A
Vibrosage
ELECTRIC MASSAGER

*Profes-sional-Type
*4 Scientifically Designed Applicators
*Sanitary

A few minutes daily use of VIBROSAGE gives that stimulating, healthful aid to circulation . . . relief from aches and pains. Four applicators assure maximum effectiveness for scalp, face and body. Operates on 110 volt, 60 cycle A.C. *Five day trial—money-back guarantee!* If your dealer cannot supply you, send $8.95 check or money order, for prepaid shipment. Or, send $2; pay postman balance plus postage and C.O.D. charges.

BEAUTY APPLIANCE CORP., Dept. V464-L, Racine, Wis.

# Cleaning is no Problem Now

By ELIZABETH WILSON

There is always plenty of work and activity at the Kester Bookout Farm, a few miles northeast of Oneonta, New York. In this household Mrs. Bookout is a very busy homemaker. Three active, alert youngster to care for, meals to prepare, laundry, cleaning and freezing are only a small part of her day.

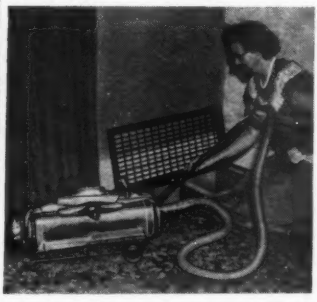
Truly a lot of living is mixed with hard work in running a 240 acre farm. Still, when I was invited in the side door of Mrs. Bookout's home and walked into her modern electric kitchen, she was as relaxed and gracious as if she had all the time in the world. As we talked, one of the first things she said, was that all this would not be possible without the help of modern labor saving appliances, particularly in housecleaning.

We reminisced about fall and spring housecleaning when it was looked forward to with dread and remembered with aching muscles and tired back. Furniture, rugs, and carpets were moved out to the front lawn for a thorough beating; curtains all came down at once; beds were stripped. The house was in a state of confusion for weeks.

For Mrs. Bookout times have changed. She says she couldn't keep her 10 room house without the help of her vacuum cleaner. No longer is the house turned upside down for general cleaning. The vacuum cleaner is brought out at least every other day so no dust is allowed to collect. Venetian blinds in the bedrooms and living room are gone over before dirt has a chance to set. It is easy to reach window ledges and baseboards, and all furniture is cleaned with the attachment specifically designed for the job.

The floors of the long upstairs hall and bedrooms are covered with linoleum, easy to clean with the floor brush, so they need only an occasional waxing. Clothes closets are sprayed periodically with moth repellent and, again, the cleaner is used for the job. A long extension cord lets the cleaner go out to the yard to keep the car interior clean.

Housecleaning is only one part of housekeeping. Mrs. Bookout feels that a neat, well-ordered home is important to the well being of her family. The electric cleaner is a servant that she would not be without. It saves her many hours of labor; it gives her leisure time to spend with her family; and enables her to work outside her home and pursue a hobby she enjoys.



Mrs. Bookout uses cleaner attachments.

# Methods of Washing

## More Important Than Type of Machine

No one type of machine or mechanism consistently gets clothes cleaner than any other type! That's just one of the many things about household washing machines that specialists with the Agricultural Research Service found in their recently completed study of 19 washers. This group included automatics, semi-automatics, and nonautomatics with all types of mechanisms, namely agitators, modified agitators, agitating baskets and cylinders.

All washer types with various kinds of mechanisms were used in these U.S.D.A. tests.

The big difference in soil removal was due to methods of handling the washer. Biggest factors were size of load, water temperature, soak period, and operating time.

A washer is often overloaded to save time, water and detergent. Results showed that smaller loads came out cleaner. In general, clothes were cleaner when 6 or 7 pounds were laundered at one time rather than 8 to 10 pounds as recommended by manufacturers as capacity for the machine. The higher the temperature of water used, within a range of 120° to 160° F., the larger the amount of soil removed. Hotter water is not recommended as it damages washer valves and hoses and may cause severe burns. Water heaters can be set to deliver water within the proper temperature range.

A 15 minute agitated soaking of soapy warm water followed by a 10 minute wash period removed the most soil. It was much more effective than either a 10 or 20 minute soaking period. Best results were obtained between the 5 and 10 minute wash period. The maximum time tested was 20 minutes. Water capacity of the tubs seemed to have no effect on amount of soil removed.

Cold and warm rinses were also tested. There was no visual difference, but reflection readings showed a greater amount of soil removal with the warm rinse.

Centrifugal extractors or wringers had no effect on amount of soil removed. Neither did the water extraction methods have any significant effect on breaking or shrinking of lingerie fibers during 50 washings. However, in general, it was found that centrifugal extractors removed more water per load than wringers.

Tests of detergents (both soap and synthetic) with hard water showed great difference in soil removing ability. It is recommended that the homemaker fit the type and amount of detergent to the hardness of local water and the amount of water the machine uses.

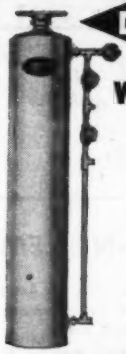
Contrary to belief that overloading the machine damages the motor, this was found to be slight. The biggest disadvantage of overloading was poor washing results.

These results are available in Technical Bulletin No. 1088 "Home Washing Machines-Operating Characteristics and Factors Affecting Their Performance" from the U.S. Department of Agriculture, Washington. D.C.

### A Word of Caution

Roasts and fowls wrapped in aluminum foil should be placed in an electric range oven with care, especially if the oven has an open heating unit. If the foil comes in contact with the unit while being handled, it will conduct a shock to the person.


SAVE with a DIAMOND WATER SOFTENER only $88.00



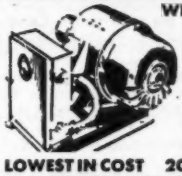
A complete DIAMOND JR., fully guaranteed and ready for immediate attachment to water lines is yours . . . for only $88.

Full 30,000 grain capacity, it will provide soft water for the average small family. Large 50,000 size, only $132.

Write for complete information to . . .

OSHKOSH FILTER and SOFTENER CO.
OSHKOSH, WISCONSIN

KILL Power Failures WITH YOUR TRACTOR



Why wait for a power failure. Protect your farm and family NOW with this low cost stand-by generator. Operates from tractor or gas engine, complete with approved safety switch.

LOWEST IN COST 20 YEAR WARRANTY

WRITE FOR FREE FOLDER TODAY! WIND POWER NEWTON, IOWA

DON'T RISK INFECTION FROM RAW MILK

Wonderful NEW Esco QWIK-WAY HOME PASTEURIZER

- Pasteurizes in 15 minutes
- Completely automatic
- Fully guaranteed

Same principle used in commercial dairies. Preserves full natural flavor and sweetness of milk. Sanitary milk container removable for quick cooling, storing in refrigerator. Aluminum and stainless steel construction; compact, lightweight, easy to clean. No moving parts, no timer to set.

1 gal. size

At your dealer's, or write for free folder.

$28.95 Full 5 qt. capacity

ELECTRONIC SPECIALTIES CO., INC.
1 Island Avenue, Batavia, Illinois.

*FUN FOR ALL—the whole family can take part in this contest. CASH PRIZES will be awarded for the best suggestions for a last line to complete the verse at the bottom of this page.*

*What Would YOU Say?*

# Rhyme Contest

## RULES—NOVEMBER CONTEST

Seven cash prizes will be awarded for the best last line to complete the verse in the coupon below. Your suggestion should rhyme with the second line.

The first prize will be $25 cash; the second prize $10. In addition, five consolation prizes of $3 each will be awarded for the best last line furnished.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may enter but each contestant may submit only one line.

Question "A" must be answered.

Entries must be sent to he Contest Editor, ELECTRICITY ON THE FARM Magazine, 8 So. Dearborn Street, Chicago 3, Ill., before December 5.

The decision of the judges is final and all entries become the property of ELECTRICITY ON THE FARM Magazine.

Winning names and entries will be announced in the February 1955 issue.

Send your entry on the coupon or make out a similar form on a plain sheet of paper or government postcard.

*Jim must go to the barnyard each night*
*How he gropes through the dark is a fright*
*What he needs is a line*
*With a switch, how divine*
*? ? ? ? ? ?*

**My suggestion for a last line to the above verse is:**

.....

**(A) What are the first four electrical farm machines or home appliances that your family plans to buy?**

1. ..... 2. .....

3. ..... 4. .....

My name is.....

R.F.D.....Post Office.....

County ..... State.....

## Awards For June-July Contest

*Biddy Cluck and sisters, too,*
*Should lay eggs, but seldom do;*
*But with henhouse dark*
*I heard Biddy remark*
*? ? ? ? ? ?*

## The Winning Last Lines

### FIRST PRIZE—$25 CASH

*"No watts, no eggs, no revenue"*
Mrs. Roy J. Mosner
Route #2, Box 275
Hillsboro, Oregon

### SECOND PRIZE—$10 CASH

*"If we had 'WATTS', I'd lay a few"*
Mrs. Norman C. Brown
P. O. Box 285
Waynesboro, Pa.

### Five Consolation Prizes $3 Each

*"Lack of lights just licks this crew"*
Mrs. George Bertrand
Box 50
Mountain Top, Pa.

*"Give us light and eggs will accrue!"*
Mrs. James Gatlins, Sr.
Route 3
Madison, Georgia

*"With lights—egg records we'd outdo"*
Irene Bishop
10082 Dolan Road
Memphis, Michigan

*"I want 'rays', so does my crew"*
Paul Rodman
R.F.D. West Breitung
Kingsford, Michigan

*"Night lights are quite overdue"*
Burt Wetzel
R.F.D. 1, Box 82
Fallbrook, Calif.

### Honorable Mention

Mrs. Durward W. Balduf, Batavia, New York; Lyndell Conrad, Burlington, Wisconsin; Mrs. Merwin C. Day, Philipsburg, Montana; Mrs. L. C. Dick, Attalla, Alabama; Charles Dow, Rockford, Illinois; Mrs. Walter J. Eigsti, Manson, Iowa; Miss Linda Greeler, Neosho, Wisconsin; Mrs. Laverne Hasse, Loganville, Wisconsin; Mrs. Kenneth Heistand, Baxter Springs, Kansas; Rudolph J. Heyne, Forestville, Connecticut; Mrs. Cora A. Jones, Yakima, Washington; Mrs. M. L. Mallory, Yakima, Washington; Mrs. Lawrence Ott, Columbia City, Indiana; Mrs. Raymond Pierce, Westport, New York; Margaret Ryan, Enosburg Falls, Vermont; P. G. Ryan, Enosburg Falls, Vermont; Mrs. H. N. Sawyer, Harlingen, Texas; Harold Starrett, Bagley, Minnesota; Iscah Tron, Marion, Ohio; Mrs. Clarence Winters, Bingham Lake, Minnesota.

*The verse for this month's Rhyme Contest was furnished by one of our readers, D. C. Hornbeck. R.F.D. 1, Buckhannon, W. Va.*

## Easy Sewing

**9399**—Look slimmer, trimmer, taller in this half-size step-in! You'll be delighted with the perfect fit! Half sizes 14½-24½. Size 18½ takes 4⅝ yards 35-inch fabric.

**9238**—Easy to sew—jiffy to iron! This is the dress you'll reach for most often! Misses' Sizes 12-20; 30-42. Size 18 takes 4½ yards 35-inch fabric.

Send THIRTY-FIVE CENTS (in coins) for EACH pattern to: ELECTRICITY ON THE FARM, 233, Pattern Department, 243 West 17th Street, New York 11, New York. Add FIVE CENTS for EACH pattern for 1st-class mailing.

IN CANADA: 60 Front Street, Toronto, Ontario.

## Shop for a Mixer

. . . . . (Here from page 19)

which extracts juice from fruits and vegetables. Carrots, celery, and such vegetables can be used with this to make a healthful vegetable juice cocktail. Just the

Hamilton Beach Drink Mixer

juice is extracted. The pulp is retained by the machine and then disposed of. Its stainless steel spinner, wooden feeder, and plastic container are impervious to vegetable and fruit acids. Operating on a ⅓ hp motor, it sells for 70 dollars.

No longer do you have to visit the soda fountain for your favorite creamy malt or milk shake. It can be made with a drink mixer, a new home version of the soda fountain type. This appliance mixes milk shakes, and aerates or fluffs any kind of drink. It uses a 20 ounce

Waring Blender

plastic cup which has a usable capacity of 16 ounces.

Success in the use of this blending and mixing part of the vast appliance family is dependent upon use and care. It is important with this group, as with all others, to follow recommendations given in the individual instruction book.

VOGEL
PATENTED

FROST-PROOF HYDRANT

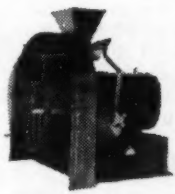
- Will never freeze when properly installed.
- Provides running water even in coldest weather
- Assures Positive Fire protection
- Over a million Vogel Frost-Proof Closets and Hydrants have been sold.

*The handle in this position shows at a glance that the water is positively shut off and is your guarantee against freezing and leakage.*

For information, see your nearest Plumbing Supply House—or if you write us direct, state the county in which you are located.

JOSEPH A. VOGEL CO. WILMINGTON 99 DELAWARE

*Grind Feed for 1c/100 lbs.*



WITH THE DECKER
*GrainMaster*
HAMMER MILL

Fully-automatic, yet low-priced! Saves time and money . . . grinds any size. Grind feed daily and get more milk, more eggs, more weight on steers and hogs.

(Front housing removed)

*Write for Literature*

DECKER MANUFACTURING CO.
Dept. O • Box 1572 • Rockford, Ill.

SAFGARD
PRES-VAC MILK AND CREAM PASTEURIZER

Pasteurizes Up to 2 Gallons in 24 Minutes

*Pressurized heating* destroys all milk-borne disease germs faster and *vacuum* cooling seals in all vitamins and delicious flavor. 1 year guarantee.

Write for FREE Descriptive Circular! Dept. 11-E

Model P-3000 2 gals. cap. f.o.b. factory $37.50

SAFGARD DIVISION
GRAND SHEET METAL PRODUCTS COMPANY
Melrose Park, Illinois

# for Junior Partners

**Hi!**

*This month we join in tribute to the FFA electrification winners. There's a little sketch of each of them, below. It's our way of saying, "Well done".*

*There's also a fine story about starting a farm shop. We hope you'll like it, and possibly start one. Besides the seven steps Mr. Keys lists, I want to add another. That's a power driven grindstone or emery wheel. And I want to suggest that you get it first! There's nothing worse than trying to work with a dull tool!*

*Among the tools you should put on a regular service list are the kitchen knives. Believe me, if you want to get in solid with Mom, give those knives a honing once a week. She'll love you for it.*

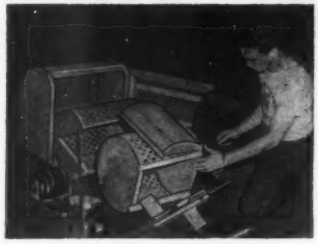
Kenneth V. Anderson

# FFA Electrification Winners

Donald Sanford, Jr., of Route 4, Jasper, Alabama, a 1954 graduate of the Walker County High School, was named winner of this year's Future Farmers of America national award for achievement in Farm Electrification. Recognition, in the form of a $250 check, was presented to him at the 27th annual national FFA convention in Kansas City's Municipal Auditorium.

Three other Future Farmers received awards of $200 each as regional winners in Farm Electrification. They were Wayne Hughes, 18, Route 1, Knapp, Wisconsin, a member of the Dunn County FFA chapter at Menomonie; Donald M. Gehrmann, 19, Route 1, Wyoming, Delaware, a member of the Caesar-Rodney High School FFA chapter; and Rasmus E. Indreland, 17, of Harlowton, Montana.

Funds for the awards were provided by the Future Farmers of America Foundation, Inc., which is supported by annual contributions from some 250 business and industrial firms, organizations, and individuals. Each of the four winners had previously received $100 for being tops in his respective state. Here are summaries of the winners' activities.

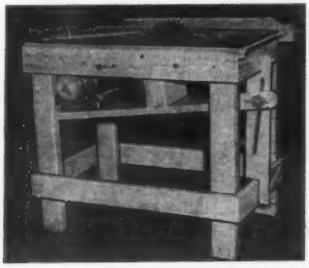


## Donald Sanford

Don Sanford's record in farm electrification might be summed up by saying he has done a lot of work making electricity work for him. He owns eight electric motors, four of which he salvaged from junk and repaired.

Don put one of the motors to work turning a green pea and lima bean sheller that he built. It's valued at $200. Another motor turns a 30-inch exhaust fan he built for the home; a third turns a pulley where the handle used to be on the corn sheller.

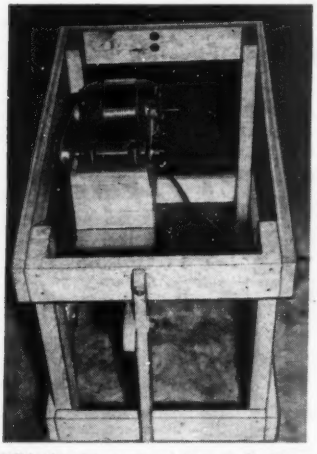
He bought an old gasoline engine lawn mower for $10 and replaced the worn-out engine with a ½ horsepower electric motor that he'd bought for $10 and repaired. "I found it worked perfectly," he said.

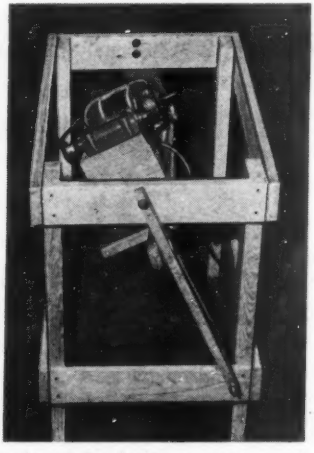


Don Sanford's completed table saw.

Another of young Sanford's major accomplishments was the construction of a 10-inch tilting-arbor table saw using a ¾ horsepower motor. He bought the arbor, motor, and saw blade, and with lumber, and miscellaneous bolts and nuts turned out a saw of his own design. This was at a considerable saving over the cost of anything of comparable capacity that he could have bought.

He built a brooder for his pigs





With the top removed, here is Don's saw set for regular ripping or cross cut work (left) and for a bevel cut (right). Wing nuts simplify vertical as well as angular adjustments.

using infra-red heat lamps, and put his skill in electric arc welding to work in the school shop. Using scrap material he built a heavy duty stalk cutter to pull behind the tractor in his corn and cotton fields.

Sanford also has had considerable experience in electrical wiring and installation of home conveniences. He added three wall outlets in the home, installed a light in the yard and another between the house and barn, ran lines to the barn, and rewired the farm shop to provide both 110 and 240 volt service. He also did all the planning and wiring for his uncle's 12,000-chick broiler house.

All of Don's talents are not taken up by his electrical work. He has found time to be president of the student body at the Walker County High School; lettered in baseball, basketball, football and track; and served as reporter of the FFA chapter.

Don's farming program this year included a beef cow and three steers, two brood sows, 15 acres of corn and 5 of cotton.

**Donald M. Gehrmann**

Donald Gehrmann, a senior in the Caesar-Rodney High School at Camden-Wyoming, Delaware, has assumed responsibility for much of the work on his home farm since his father died three years ago.

Don raises about 4,000 broilers a year and has extended electrical lines to the broiler house for heat and light. He has repaired and extended other electrical lines around the home, working as a helper to a licensed electrician on the major jobs. His work has included repair of numerous small appliances and the regular oiling, cleaning, and adjustment of all farm equipment.

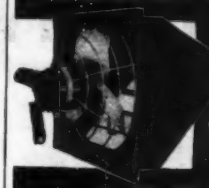
At the school he repaired an electric brooder owned by the FFA chapter and assisted an electrician in the installation of wiring for the cafeteria. He is a member of the student committee that has charge of all electric wiring and lighting for school plays and other activities.

Donald's farming program this year, in addition to the broilers, included corn and soybeans. He has served two years in the office of sentinel of his FFA chapter and has attended the last two national FFA conventions as a member of the 100-piece band.

**Wayne Hughes**

Wayne Hughes, winner of the FFA Farm Electrification award for the Central Region, is a 1954 graduate of the Dunn County School of Agriculture at Menomonie, Wisconsin. He farms with


HEALTHIER PIGS, COWS, CHICKENS with ARGUS VENTILATING FANS



TESTED and ENDORSED by leading agricultural schools

ARGUS DRAFT-FREE CLEAN AIR promotes healthier stock, more eggs, more milk

- Equipped with Minneapolis-Honeywell thermostatically controlled air switch
- Precision-balanced for minimum vibration, trouble-free dependability
- Automatic louvre action prevents back drafts

ARGUS FANS freshen air, control humidity and temperature perfectly, silently, dependably. Clean, odor-free air improves working conditions. Drier air protects buildings, prevents feed spoilage. *12" to 24" sizes suit your need.*

*Also ventilating fans for every purpose.*

WRITE FOR FREE LITERATURE

DEALER INQUIRIES INVITED

ARGUS MANUFACTURING CO.

1134 N. Kilbourn Ave. • Chicago 51, Illinois



CHANNELLOCK pliers

TRADE MARK REG. U. S. PATENT OFFICE

The most versatile tools on your bench

Look for the Channellock line when you're shopping for hand tools. Channellock pliers offer features that you can't get with other makes. And when you buy a Channellock plier, ask to see the full line—you'll find a style and model to do any job better.

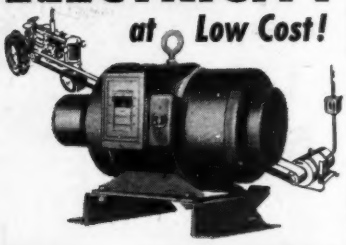
THE PLIER DESIGN THAT OBSOLETES ALL OTHERS

CHAMPION DEARMENT TOOL CO.

MEADVILLE, PENNSYLVANIA

**EMERGENCY ELECTRICITY**

*at Low Cost!*



**ONAN** Tractor Driven **GENERATORS**

*Belt up to your tractor for all the electricity you need!*

**NO MORE BLACKOUTS!** An Onan generator supplies regular 115/230 volt A.C. power for lights, heating system, milker, brooder, frozen food chest, water pump and all essential equipment. Easy to install. Hook it up in minutes. **Four models:** 3,000, 4,000, 7,000 and 10,000 watts. Complete with belt pulley, double-throw transfer switch, circuit breaker, plug-in receptacle and voltmeter, constant-belt-tension pivot base.

*Write for Free Folder!*

**D. W. ONAN & SONS INC.**
7783 University Ave., S. E., Minneapolis 14, Minn.

**non-freezing HYDRANT**

**YEAR 'ROUND OUTDOOR WATER SERVICE**

Running water for stock all winter. Shutoff valve is below frost line. Easy to install . . . lasts a lifetime.

Strataflo

**STRATAFLO PRODUCTS, Inc., Fort Wayne 1, Ind.**
Please send Bulletin Number 901 on Strataflo Non-Freezing Yard Hydrants, Wall Hydrants.

NAME _____

CITY _____

COUNTY _____ STATE _____


his parents on 240 acres, producing Grade A milk from a herd of about 30 cows.

Electricity is used extensively on the farm for such jobs as milking, cleaning the barn, cooling milk, pumping water, and powering small tools. Wayne operates and services all the electrical equipment.

His work has included installing lights in the hen house, with a time switch to provide automatic early morning light for the hens. He installed a 220-volt line to power a hay hoist motor, replaced the motor on the water pump, and installed electrical outlets in a brooder house.

He has built a 500-chick-capacity battery brooder, and 1,000 - broiler - capacity broiler pen, and a colony house for two sows. Wayne also joined in a community effort with 15 neighbors in setting poles and stringing wires to light a softball field.

His farming program this year included 14 ewes and their lambs, 4 dairy heifers, 5 acres of corn, and 2 acres of oats. In high school he has served 2 years as sentinel of the FFA chapter, was president of his senior class, and lettered in baseball and basketball.

**Rasmus E. Indreland**

Rasmus Indreland remembers his first experience with electricity was a toy car driven by a battery-powered electric motor. The batteries kept running down until Rasmus tore into it and found that the switch was shorting out.

"My dad always has done the electrical repairs around the house such as fixing switches and installing conveniences," Rasmus said. "Because I always helped him and he was willing to show me things, I had quite a bit of experience before I started to high school."

"Since then," he continued, "my work might be summed up like this: I completed seven major wiring projects and helped on four others. I have serviced eight electric motors and five six volt generators as well as rebuilt two electric motors and two generators. I have installed, or helped install, 37 electrical appliances and have become fairly skilled at arc welding."

While a freshman vocational agriculture student in Harlowton High School. Rasmus serviced one automobile starter and two auto generators in the school's farm shop. That same year, he undertook the job of rewiring a Model-A Ford car.

During the summer of 1951 young Indreland worked on a ranch in an area where electric power lines had just been completed. He assisted in the work of wiring the house, garage and granary, and in the installation of an electric stove, water heater, dishwasher, clothes washer, feed grinder, grindstone, water pump, and other appliances.

Rasmus worked alone in wiring the bunkhouse and mounting an electric motor on the cream separator. He also built an electric pump to water the garden.

That fall he helped Mr. Indreland wire their garage and shop building. Later, they extended electricity to a house they rent out, installing an electric stove and water heater.

Working on the ranch again during the summer after his sophomore year in high school, Rasmus helped install a gasoline powered light plant for emergency use when regular power fails. He participated in a project to electrify the schoolhouse and to install a telephone system in the community.

Rasmus has built several electrical projects in the school farm shop. Included among these are a pig brooder, a heater to keep chicken water from freezing, a time clock to turn lights on in the henhouse automatically, and a photographic enlarger.

He had a farming program this year consisting of three lambs and 13 acres of wheat. He has served one year as vice president of his FFA chapter, and played saxophone last year in the national FFA band.

One corner of the excellent shop on the Keys farm, at Marlette, Michigan

# How to Start a Farm Shop

One of the most popular parts of any Vo-ag course is the shopwork. If you've started your course, chances are you're already thinking about setting up a shop for your own use at home. If you are, we think you'll be interested in the recommendations of a farmer who has a top notch layout. He is Jonathan Keys of Marlette, Michigan. You can see him, in the picture, at work in one corner of his shop.

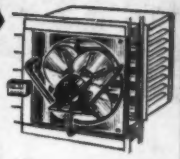
Mr. Keys says there are six basic things to do to get your farm shop off on the right foot. They are: (1) a building, (2) good lighting, (3) a good work bench, (4) a good vise, (5) an electric welder, (6) good wiring, (7) ½" electric drill.

The building, or part of a building, you will use for your shop should be big enough so that you can work on any piece of farm equipment inside. It should be insulated or otherwise prepared to make heating easy. It should be painted a light color. This is very important because a light color makes it more pleasant to work in. No one likes to work in a dark, dingy shop. The bright color reflects light and makes tools easier to find too.

Plenty of window space is a must. Ceiling joists must be strong enough to hold a chain hoist. Doors big enough to get the machinery in and a level, but not smooth, concrete floor are what you need to start your shop right.

Mr. Keys likes to have plenty of light in his shop. Not just over the bench, but enough to light up every corner. Incandescent bulbs in wide angle reflectors suspended from the ceiling on heavy duty cords provide plenty of light. They can be swung out of the way when a


INCREASE MILK PROFITS UP TO 30%
WITH Dayton BARN FANS



. . . because elimination of high moisture condition gives greater cow comfort . . . they produce more

● Dayton Barn Fans provide low-cost automatic ventilation for your dairy barn which can be paid for first winter thru increased milk profits. Barn fan provides fresh air and low humidity that promotes greater milk production . . . protects cow health by reducing germs and bacteria . . . guards your barn and equipment against moisture-caused rust and deterioration. Dayton Barn Fans are available in 16, 20 and 24" sizes, in complete package units for up to 40 head.

● See your equipment dealer about Dayton Fans for every farm ventilating job or write us for literature.

DAYTON ELECTRIC MFG. CO.
CHICAGO 12, ILLINOIS

CLAY SILO UNLOADER

A FLICK OF THE SWITCH PUTS SILAGE IN CART . . . WITHOUT LIFTING A FORK

Handles frozen corn or grass silage. Pitches it right into cart. *One motor* does all work. Unloader comes complete.
Write today
FREE CATALOG
1147 PEARL STREET
CLAY EQUIP CORP • CEDAR FALLS, IOWA

STOP Frozen Water Pipes With Electric LINE-O-HEAT®

SAFER • MORE DEPENDABLE • MORE ECONOMICAL

WARM WATER FOR HOT PROFITS!

Automatic WATER WARMER
U/L approved. Keeps water at 50° day & night. Gives you 12 more & bigger eggs per hen. Easy to use. Safe. Costs less than an egg a day to operate. $5.55.

Automatic WATERING FOUNTAIN
Best on market. Only one with no-freeze protection to 0°. Fault-free, rust-proof. Fountain (guard included): $6.95. Heater: $4.95. Both only $11.20.

CAN STAND ABUSE AND STAY IN USE!
Keeps water running even at -50°. Toughest. Best. Easy to use: wrap around pipe, secure with tape, plug in. Guaranteed. 3 to 60 ft. Priced from $2.45.

Write for FREE Literature
SMITH-GATES CORP.
DEPT. K1 PLAINVILLE, CONN.

Warm water for 2c a day!

NELSON
automatic WATER BOWL

Heats a mere bowlful — not a tankful

Adaptable to all livestock

Enjoy economical and profitable water warming even in sub-zero weather with the dependable, thermostatically controlled Nelson Water Bowl. Built of stainless steel and aluminum alloys for trouble-free operation. No floats, levers, or springs!

*See your dealer or write for folder*

NELSON MFG. CO.
315 20th St. N.E. Cedar Rapids, Ia.

TELEVISION
RADIO-ELECTRONICS

**AT HOME**—you can prepare in your spare time for a good technical job that pays real money, or a profitable business of your own in the fast-growing, big opportunity field of Television, Radio and Electronics. Men 17 to 45 preferred. Nothing else like it. Without cost or obligation, send for full facts today! Mail a postal card stating: "Tell me about Television."—to DeVRY Technical Institute, 4141 Belmont Avenue, Chicago 41, Illinois. Dept. No. EF-11K

Don't Wait For Winter Freeze!
PROTECT WATER PIPES *Now*
with *Little Giant* NO-FREEZE TAPE

KEEPS WATER FLOWING FOR FLOCKS AND LIVESTOCK. MAINTAIN HIGH EGG PRODUCTION. REDUCE DISEASE DANGER!

100% Safe... Shockproof... Waterproof. Fireproof. *Low Initial Cost!*

Low in current consumption. 20 Foot tape consumes about 3/10 of a cent per hour.

*EASY TO USE!* Wrap it around the pipe and plug it in!

FOR DETAILS WRITE...

TAPES MILLIMETRIC FROM 6 TO 40 FT. FROM $3.95

*Little Giant* FOUNTAIN ONLY $4.95

MILLER MFG. CO. Dept. EF-251 W. Kellogg, St. Paul, Minnesota

combine or other big equipment comes in.

Over the bench a silvered bowl bulb in an RLM reflector works good. It may be made portable by stretching a smooth steel wire the length of the bench. The reflector may be attached to an extension cord which is fastened to the steel wire by pig rings. With this system, you can easily glide your bench light to any point you want and the cord will be out of your way.

The third basic need is a good work bench, three-feet high, three-feet wide, as long as possible, and well built. It should have several drawers that will slide when loaded. These should not be so big that they become catch-alls for scrap metal, nor so deep you have to rummage through them every time you want something. One foot wide, six-inches deep and two-feet long is about right. Don't forget to put a stop at the back so they can't be pulled out on the floor. Your shins and feet will be right under them.

Number four is the vise. Mr. Keys likes a six-inch heavy type that comes with pipe holders under the square jaws.

Number five is the farm welder. Mr. Keys feels he would get the welder before he got drills, compressors, etc., because it is more essential.

Number six is a good electrical installation. Mr. Keys thinks a 60 ampere 230 volt service carried on at least #8 wire will do the job for most shops. However, he suggests you consult your power supplier or your local wiring contractor *before* you start.

Number seven is a ½" electric drill which can be used on dozens of different repair jobs on the farm. In addition, it can be used as the power source on certain types of electric wagon unloaders, as well as to convert your hand post hole digger into a power digger.

We haven't seen a simpler set of rules for starting a good farm shop. There are many pieces of equipment you'll want to add as time goes on, but here is the core. If you follow the seven rules given here, we know you'll be pleased with the results.

## Grading Time Shortened

J. O. Bruce and his son, Wayne, of Nebo, Virginia, have taken much of the guess work out of grading tobacco. They have been using fluorescent lights, while grading their Burley crop, for the last three years.

To do a good job of grading tobacco, a good uniform light is necessary. On farms, the leaf is graded, largely, by color. Mr. Bruce used to grade by daylight, provided through a northern window. This light changes during the day, and differs in quality from day to day, depending on the weather conditions. While using this system, it was only possible to grade tobacco during the day and only on those days that were not cloudy.

Now, while grading during the day, blinds are put on all the windows to keep out the daylight. By doing this and using the fluorescent light, more uniform grades are obtained. The green and red coloring shows up more clearly under the fluorescent light. However, the grading, or sorting, can be done at night and the daylight hours can be spent on other farming operations.

Mr. Bruce says that by using a fluorescent grading light, he can grade his crop in one third less time than when grading with daylight. This allows him to get his tobacco on the market earlier—usually the time that the price is highest. B. M. VASSAR

# Questions and Answers

### Fluorescents for Hens

▶**Question:** *Are fluorescent lamps good to use in a poultry house?*

M. N., Wisconsin

▶**Answer:** Generally speaking, fluorescent lamps are not recommended in buildings where the temperature will go below 50 degrees. As poultry house temperatures in northern areas frequently go below that point, fluorescent lamps would not be recommended for such use.

### Freezer Current

▶**Question:** *It costs us $5 a month to operate our 18 cubic foot freezer. Dealers tell us a freezer that size should cost only $2.50 per month. We do very little freezing—only vegetables in summer and poultry in the fall. Rest of meat is frozen before-hand. What is your opinion? Also, should electricity run through the freezer when it isn't operating?*

Mrs. W. L., Iowa

▶**Answer:** For average use, I would not expect an 18 foot freezer to consume much more than 80 or 90 kilowatt hours per month. Naturally, averages can be misleading, but 85 kilowatt hours per month is an accepted figure for a freezer of that size. You would have to multiply this figure by the cost per kilowatt hour to arrive at a monthly operating cost.

Electricity should not run through the freezer when it isn't operating. Current should be available at the contacts, but, unless the compressor is running, no current should be drawn. If you do have a current leak, it would result in higher than normal operating cost and it might also present a potential hazard. Have your freezer checked to be sure it is in proper operating condition.

### Slow Starting Motor

▶**Question:** *The motor on my barn cleaner will not always start. When I put on the switch it makes a humming noise. If I turn the motor a little it may start, although not every time. Sometimes it will not get in high speed until it has run for a few minutes. What is wrong with it?*

N. F., Wisconsin

▶**Answer:** The symptoms you describe in your motor's operation are those generally associated with inadequate wiring and subsequent low voltage. Have a competent electrician examine the circuits serving your property to see if they have heavy enough wire to carry the load. The service entrances of the various buildings should also be inspected to see that they have ample capacity. Properly wired, the motor on your barn cleaner should start immediately and get up full speed in seconds.

### Low Water and Automatic Washers

▶**Question:** *Our water supply is low in summer. Is there any automatic clothes washer made with manual control so as to operate washer without using too much water when supply is low?*

S. J. V., Ohio

▶**Answer:** Most of the automatic washing machines on the market today are designed so that the various washing, rinsing, and drying cycles can be altered by a manual setting of the dial. However, if the various washing and rinsing cycles are cut short, the clothes will not be thoroughly cleaned. Sequences may be interrupted for


Electro-Line

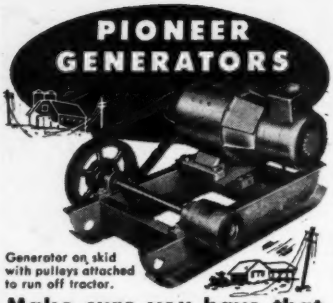
ELECTRO-LINE FENCING
Doesn't "Cost" ... IT PAYS!
Electric fencing will help you get the most from your land.
Electro-Line controllers will help you get the most from your fence!
A Controller for Every Fencing Job.
ELECTRO-LINE PRODUCTS CORPORATION
Saukville, Wisconsin

It Pays to.. Grind Your own Stock Feed
Cut Feeding Costs 20% to 40% and increase the weight of growing Pigs, Hogs, Cattle, Sheep and Poultry.
Grind shelled or ear corn, wheat, oats, alfalfa, soy beans and roughages for as little as ¾ cent per hundred pounds, with BELL'S "MODERN" HAMMER MILL. Electric or Engine power—2 Sizes;—Write for Special Folder and Prices today—
THE C. S. BELL CO. Mfrs.
Dept. E. HILLSBORO, OHIO.

Stop FROZEN PIPES with WRAP ON
CABLE & INSULATION
Protection at 35° Below
Enjoy year 'round running water free of trouble. Also protects pumps. Thousands of happy users. Easy to install yourself. Six cables sizes $1 to $6. The right length properly installed outlasts the pipe. Also thermostat & insulation. Send for free instructions.
GRO-QUICK MFRS., 370 W. HURON ST., CHICAGO 10

VanDale SILO UNLOADER
GUARANTEED!
We guarantee the VanDale to do the job it is designed to do—unload corn or grass silage, packed or frozen. Every VanDale Silo Unloader carries a guarantee policy.
FIRST IN SILO UNLOADERS
PRICED UNDER $1000!
VanDale
FARM MACHINES, INC.
Dept. 1154-E, Wayzata, Minn.
Send me your bulletin on the VanDale SILO UNLOADER and your Guarantee Policy.
Name.....
RFD Route..... Town.....
County ..... State.....

PIONEER GENERATORS



Generator on skid with pulleys attached to run off tractor.

**Make sure you have that vital current you need**

**WHEN THE POWER GOES OFF!**

*Storms and local power interruptions* could cripple the daily normal milking, pumping, cooling systems and lighting operations on your farm. A temporary disruption could be *costly!* A few dollars spent now on stand-by generator can protect you.

Be sure it's a PIONEER Generator. Experience of 20 years assures you a *sturdily* built, *precision* engineered, *trouble free* Generator.

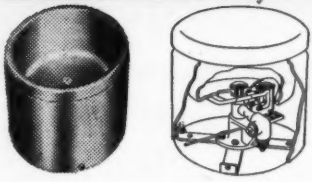
**WRITE TODAY** for FREE catalogs and prices on the 250 to 12000 watt Pioneer Belt Driven Generators. They're low in cost and priceless in an emergency.

**PIONEER Gen-E-Motor Corp.**

5834 West Dickens Avenue • Chicago 39, Illinois



**SAVE MONEY WITH A *Rhinehart* STOCK WATERER**



New type electric cast aluminum waterer—completely automatic—heated inlets available for sub-zero weather. Flow rate 3½ g.p.m. Designed for cattle, hogs and lambs. Slave units provide additional water points at half cost.

**$39.95** Freight Prepaid

Order from your dealer or direct from factory.

**RHINEHART MFG. CO., INC.**

**1188 Polk St., Fort Wayne, Ind.**


a period of time in which the water pump may recover its capacity. This, of course, requires the attention of the operator during the washing process. You should not plan on using an automatic washing machine unless you can provide the water needed for the cycles.

### Moving Range

▶**Question:** *I want to move my electric range, which will mean a fourteen foot longer stove cable. Would it be advisable to splice the cable or should we buy all new wire?*

Mrs. H. C. N., Indiana

▶**Answer:** You should have the circuit from your entrance panel extended to a polarized 230 volt outlet at the new location. Use the same pig-tail with which the range is now connected. If desired, you may splice onto the circuit wires to extend them to the new location of the outlet. However, it would probably cost no more to run new cable from the service entrance to the outlet than it would to make the splice.

### Sand Point for Well

▶**Question:** *I have a pressure water system to put on our well and want to know if a sand point on the end of the pipe will keep the sand out of the pressure tank?*

Mrs. G. J., Oklahoma

▶**Answer:** Properly selected well points, for use in sandy soil, will keep the sand out of your pump and pressure tank. The screens for this type of well point range from 20 openings per inch (the coarsest), up to 100 openings per inch. A screen with a 60 opening mesh is most popular for straining ordinary sand, while numbers 20 to 50 mesh are used for coarser sand and gravel. Numbers 70 to 100 are used for finer grains of sand.

### Comfort Kilowatts

. . . . . (Here from page 10)

Understand also that the service entrance and wires, which handle the complete farm load, should also be sized to care for electric heating. Whenever any high wattage equipment is added, not only should the capacity of the circuit be adequate, but the service entrance must also be checked to see whether it will carry the additional load. Though it can be expensive and difficult to install a new service entrance, you cannot enjoy the advantages of this form of heat without a sound, safe installation.

But whether it is expensive or moderate in cost; whether it is troublesome or trouble free, electric heating is gaining acceptance. Perhaps it is because our standards are rising. In some areas coal is much cheaper than oil, but there have been countless conversions to oil. Deluxe model cars outsell the drab standard models of the same make. Perhaps therein lies the secret of the increasing popularity of supplemental electric heating.

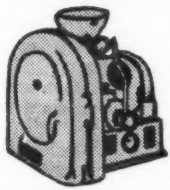
### Dialing the Right Mix

. . . . . (Here from page 16)

provide practical relief for every farmer who is somewhat weary with old fashioned methods of handling grain—tired of carrying heavy bags—of mixing and moving heavy grains with scoop shovels—impatient with the expense and wasted time required to obtain ground ration from a commercial mill—or fed up with the inconvenience of setting up a tractor-mill to do the job at home. With this new system all you have to do is dial the mix, set the timer, and go on about your other work. The new mixing-mill can do the job automatically!


**HAVE FRESH GROUND GRAIN DAILY**

**Viking** ELECTRIC AUTOMATIC **HAMMER MILL**



*Save* **WORK** *Save* **TIME** *Save* **MONEY**

*Write For Free Literature. Some Territories Open for Dealer's Franchise.*

**HORVICK MFG. CO.**

**MOORHEAD, MINN.**

**ALL WEATHER FLOODLIGHTS FOR FARM LIGHTING**

USES 6-15 W. FLUOR. TUBES STEEL CASE • PLASTIC WINDOW SIZE 21"x21". WT. 35 LBS. CARRYING HDL., FLOOR STAND CEILING BRACKET MFD. G.E. SURPLUS NEW COST U.S. $60

PRICE **$14.95** TUBES $4.80 EXTRA

**ELKIN CO., CORONA 68, N.Y.**

# Look to the Leader for the Finest Electric Ranges!

***Hotpoint Pioneered and Perfected Modern Electric Cooking —and Has Built More Electric Ranges Than Any Other Manufacturer!***

**WHATEVER THE RANGE** of your dreams may be, you'll find it in a Hotpoint Range. For Hotpoint is the world's leader—and, among other great firsts, is the *first* electric range manufacturer to bring you *all three* types: Full-size Hotpoint Super-Automatics, like the one shown above . . . Hotpoint Super-30's, the *only* space-minded 30-inch ranges with deluxe BIG-range features . . . and new built-in Hotpoint Custom-line Ranges!

**Choose your favorite** and depend on this—you're getting the most advanced, most completely automatic range of its kind.

**When you visit** your Hotpoint dealer* see the complete line of beautiful new Hotpoint Ranges—including the exciting new Tusque Colorange!

**Be Modern... Cook Electrically!**

*Dealers are listed in most classified phone directories.

Guaranteed by Good Housekeeping

Hotpoint

Tune in **OZZIE and HARRIET** Every Week On TV!

*Changes your viewpoint . . . automatically*

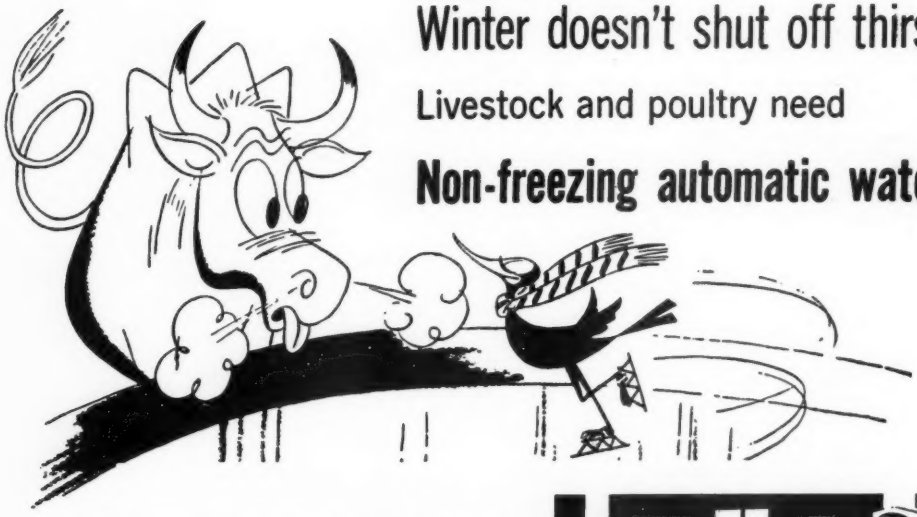
HOTPOINT CO. (A Division of General Electric Company), CHICAGO 44.

PERIODICAL

# Winter doesn't shut off thirst

## Livestock and poultry need

# Non-freezing automatic waterers



Among the hundreds of uses for electricity on the farm, few are as important as automatic non-freezing livestock waterers. The automatic waterer with thermostatic control to prevent freezing provides a constant supply of drinking water that encourages animals to drink more often.

Cattle, sheep, hogs and chickens all grow and gain weight better when non-freezing drinking water is provided. Production of milk, meat and eggs increases, making the non-freezing waterer an important production tool. Authorities report that continual access to drinking water increases milk production as much as 10 to 15%—an important profit consideration.

***This magazine is sent to you as a service to acquaint you with the many advantages your electric service provides. Our FARM SERVICE engineers can help you apply electricity to your farm chores . . . this service is yours for the asking. Call or write our nearest office.***

CENTRAL ILLINOIS LIGHT COMPANY